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TROPICAL DISEASE DANGERS IN HAWAII

A SYMPOSIUM

CIVILIAN HOSPITAL NEEDS

SURVEY REPORT
(CONCLUDED)

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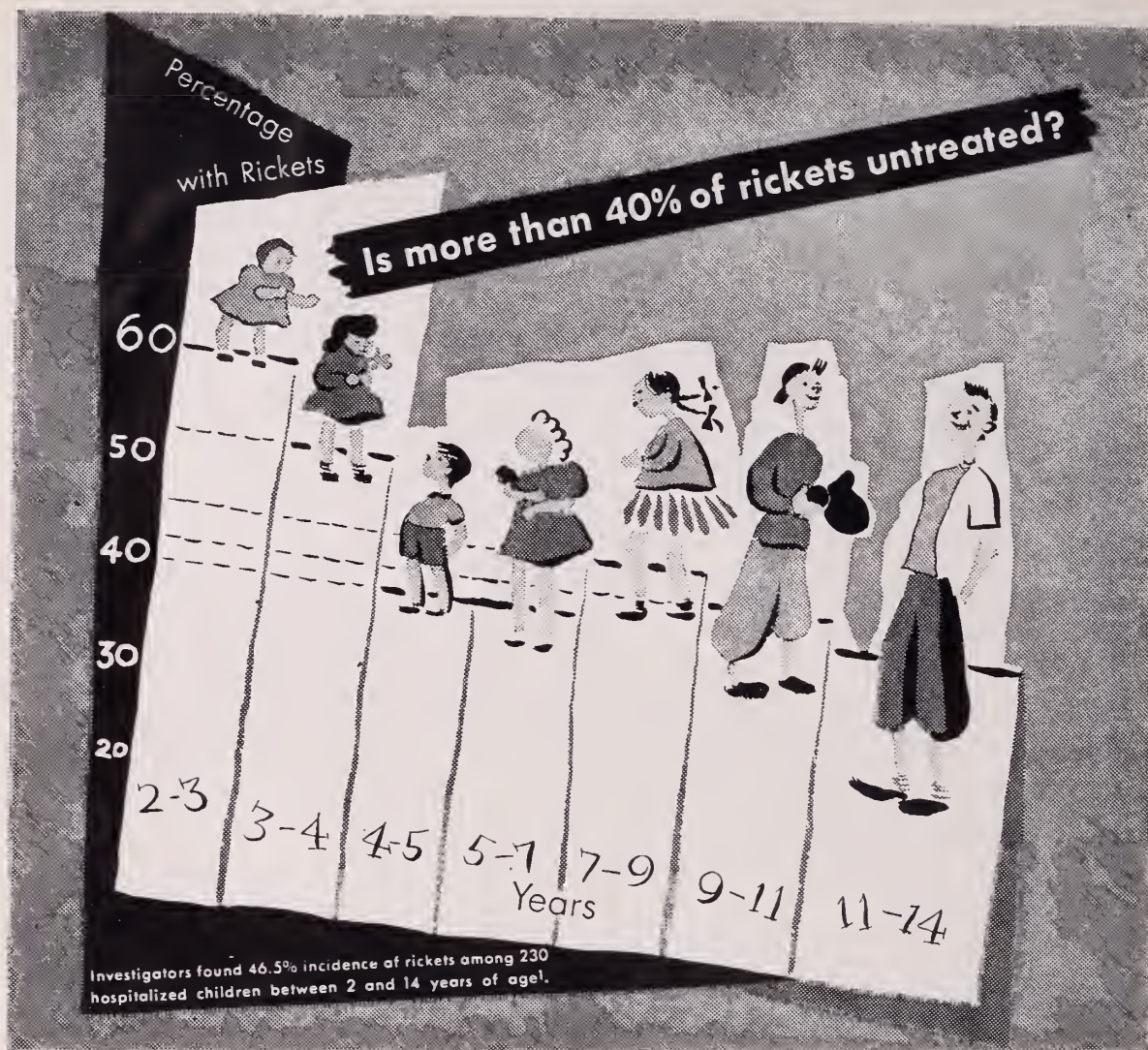
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1. Follis, R. H.; Jackson, D.; Eliot, M. M., and Park, E. A.: Am. Jrl. Dis. Child. 66:1 (July) 1943. Note: A reprint of this paper is being mailed to all physicians. Additional copies are available upon request.



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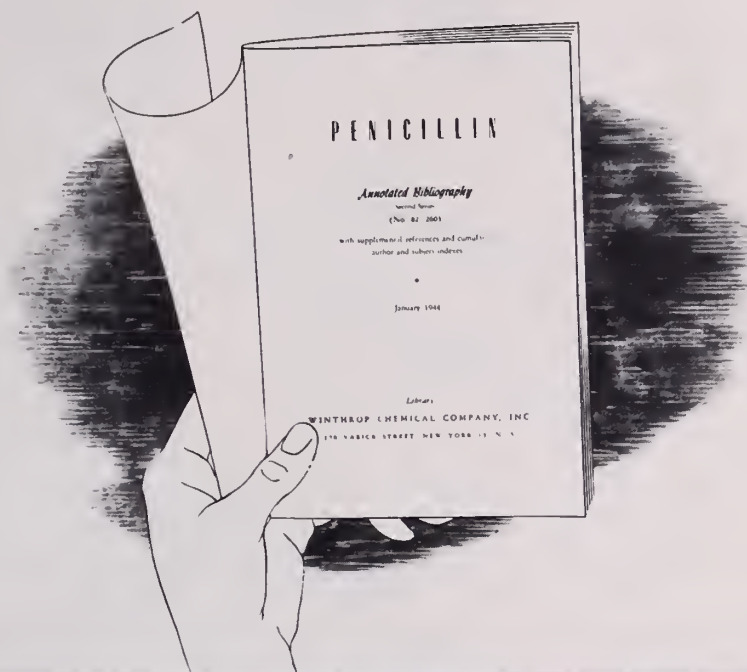
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Tropical Disease Dangers in Hawaii

PANEL DISCUSSION, MAY 5, 1944

Chairmen: Dr. Nils P. Larsen, Medical Advisor, H.S.P.A.
Colonel Charles T. Young, MC, AUS*
Commander A. M. Masters, MC, USNR*

THE CLIMATE OF HAWAII

DR. LARSEN: What constitutes a tropical climate?

DR. E. A. FENNEL: It involves the degree of temperature, humidity, wind direction and velocity, and any place hotter, wetter and stiller than Honolulu is tropical.

DR. LARSEN: Although on the map we are in the tropical zone, we actually enjoy a semi-tropical climate. Houghten reported after much experimentation that there were certain combinations of conditions which consistently produced equal comfort, and charted the results on a scale of so-called "effective temperature." On this scale the "comfort zone" for people normally clothed and slightly active ranges from 64° F. and 100 per cent relative humidity . . . in still air to 88° F. and 17 per cent relative humidity in air blowing 500 feet per minute. Expressed in terms of "effective temperature" the comfort zone lies between 63° and 71° F. Anything outside of it produces discomfort in increasing degrees. Above this effective temperature is the climatic condition known as tropical. The average on this scale for Honolulu for the past 41 years is 70.5° F. in still air (only found indoors), or 63.7° F. with the wind blowing 500 feet per minute. Higher wind velocity is not recorded on the scale, and since the average wind velocity of Honolulu is 756 feet per minute, the average "effective temperature" is about 63° F. However, in Hawaii we realize our effective temperature varies with location. Each island has a dry area, with rainfall 20 inches or less, and a wet area, with rainfall over 200 inches and on some mountains up to 600 inches. We have no definite "rainy season" and our average sunshine per day is 7½ hours. Distinctly this is not a tropical climate, but what do we feel is the danger here of the tropical diseases?

There are among us those who have made a real study and have had experience in certain phases of these problems, and we want them to take part in this discussion.

We have had placed right in our lap as a result of this war a number of diseases which are new to the mainland United States, some of them tropical diseases which are common in certain areas of our South. Because of the large number of people in transit

through these islands in all directions, we are naturally much concerned as to what type of disease might be brought in here. The Public Health people are on their toes, and it is unlikely that the danger is great, but this is strictly conjectural. It is important for us to evaluate these dangers.

Because of limited time, the three chairmen have decided to pick out for discussion the diseases which constitute the greatest threat to these islands, and we have indicated for discussion today: dengue, filariasis, malaria, bacillary and amebic dysentery, Weil's disease, plague and typhus.

DENGUE

DR. LARSEN: Dr. Nance, what are the minimum requirements for a diagnosis of dengue?

DR. F. D. NANCE: A rapidly spreading epidemic illness with symptoms of severe headache, backache and aches in the joints, a camel-back fever curve with a definite rash, and a leukopenia, would probably mean dengue. The fever is usually of three days duration, with a remission, then a second fever with a diffuse rash. In children it is sometimes hard to differentiate between this and exanthem subitum.

CHAIRMAN: Has the present epidemic been stopped?

DR. DAVID BONNET: We think we have stopped the epidemic and been successful in preventing it from going to the other islands. Now we average between 5 and 10 new cases a week, whereas a short time ago we had 150. The cases reported do not necessarily give a true picture, though, since many people having the disease do not report. They know it will run its course and doctors can do nothing about it, so they let it run. Frost on the mainland stops an epidemic by killing the mosquito.

DR. E. A. FENNEL: Perhaps there are other unknown factors. One previous epidemic here died out by itself.

DR. BERNARD BERGER: In the disappearance of the 1903 epidemic there was another factor. It appears that dengue gives the victim relative immunity for six months to a year. It is possible, therefore, that the immunization of the population is the cause of the disappearance of some epidemics. In such epidemics it usually affects at least 75 per cent of the population before it dies out. In the maximum week of the present epidemic we had 159 cases. Last week only 5 were reported.

DR. DAVID BONNET: The epidemic started in Waikiki; effective spraying reduced it. Then it spread

* Due to military regulations the names of most of the service men who took part and helped arrange the program were deleted. We want to express our appreciation for their excellent cooperation, and we are sorry not to be able to give them full official credit.

to adjacent Kakaako. The mosquito (*Aedes aegypti*) travels only approximately 100 to 200 yards. Two varieties are responsible for carrying dengue. These mosquitoes are less common now than when the mosquito control program began. The patient becomes infective on the last day of the incubation period, hence before he knows he is sick he is already infecting healthy mosquitoes.

[There was much disagreement about the travel habits of this mosquito. MR. C. E. PEMBERTON and MR. E. ZIMMERMAN decried the danger of ascribing too short a flight to certain mosquitoes. They felt high winds, etc., could carry even the short fliers great distances. However, DR. BONNET defended his point that experience had shown that this mosquito tends to cling to the ground, and only exceptionally and in small numbers would it be carried far. If it were not for this, a control program of isolating sections of the city would not be effective. In Honolulu it worked. Many sections of the city remained free, and none of the other islands was affected. DR. RICHARD K. C. LEE felt some of the credit should also go to the Board of Health for the rapid isolation of patients when they were reported, and the spraying of each patient's premises. This is probably the first time in the history of dengue when the disease was checked at the onset in a large crowded area.]

FILARIASIS

CHAIRMAN: Since DR. G. has seen a good many of the men evacuated for filaria, I would like to open this discussion with a short description of the early manifestations of this disease. These early cases most of us know about.

DR. G.: When first seen it is a mild type of disease. The patient runs a low grade fever; he also complains of diffuse aches and pains, especially at night. He has mild lymphadenopathy, especially in the posterior cervical, supraclavicular, axillary and inguinal nodes.

Sometimes slight skin changes are seen, especially in the scrotum. There is often thickening of the spermatic cord. There is very little if any edema. The blood is usually negative for organisms.

DR. DAVID BONNET: We do have the chief vector for filariasis—*Culex fatigans* (*quinquefasciatus*)—in Hawaii. Nearly all the local residents who have free microfilaria in the blood stream, however, are Samoans living at Laie, Oahu. Seventy-nine individuals were examined at Laie by direct blood smear (not by centrifugation), and four were found with microfilaria.

DR. JAMES ENRIGHT: Microfilaria in the blood are not harmful. The blood of such a patient can even be used in transfusions without transmitting the disease.

CHAIRMAN: Since we have both infected persons and the insect vectors, why isn't this a real danger zone?

COMDR. R. W. BABIONE: This disease above all others, by its very nature, requires multiple inoculations. It takes many, perhaps hundreds, of worms in the body to produce symptoms, and probably a person will have the disease for at least three years before he develops enough worms to be able to transmit it. The host and the worm must learn to get along amicably together before the worms can travel freely enough to be picked up by mosquitoes. The reason for this seems to be that an allergic reaction around the worms keeps them more or less localized. Unless there are repeated reinfections, requiring large numbers of mosquitoes—so that eventually the victim becomes desensitized—the chance of his transmitting it is very slight. The natives of Samoa develop such severe cases of elephantiasis partly because of their habit of going about, and sleeping, with very few clothes. This leads to their being bitten many, many times by infected mosquitoes, and contributes to the probability of streptococcal lymphadenitis from many infected cuts on the legs and feet.

[There was then considerable skepticism expressed by various discussants, raising these questions: (1) Why can't we develop a large pool of infected individuals? (2) Since for some years we have had infected individuals at Laie, and we have the vectors, why haven't we had locally produced cases? (3) If more and more men come up from Samoa who have been infected, won't we eventually have enough infected mosquitoes to make the disease endemic here? (4) Why are infected men sent back to a temperate climate in the States instead of up to Attu or some other military location where filaria is not endemic?

It was then pointed out by various men that: (1) The density of our mosquito population is so small and the availability of large numbers of the organism is so limited that the danger from filaria in Hawaii is purely theoretical; it would be a very difficult disease to transmit under the conditions present in Hawaii. (2) Some Army and Navy personnel are actually being returned to duty with this disease, but in non-endemic areas. One of the evils of the disease that must be combatted is the men's mental reaction after having seen some of the bad cases of elephantiasis that may develop following the disease. Knowing they have it, they can then only picture themselves as about to become a frightful liability. It was stated that we could be certain this would not occur, since the disease is relatively self-limiting, and unless the patient is repeatedly infected with large numbers of worms, *elephantiasis will not develop*. One of the men brought out the fact that in South Carolina some years ago an endemic area developed, but that area has entirely disappeared and at the present time there is no disease there.

The consensus of the men who had been working most with mosquitoes as well as filaria was: Hawaii is in no great danger (1) because of the custom of dressing here; (2) because of relative mosquito control; (3) because of the attitude of the Public Health Service in watching possible spread, and (4) because of the tendency of self-limitation of the disease. In other words, filariasis is not a danger that Hawaii needs to be worried about.]

MALARIA

CHAIRMAN: Perhaps one of our greatest fears is malaria. Why hasn't malaria been introduced? More people are incapacitated throughout the world from malaria than from any other one disease.

MR. E. ZIMMERMAN: Undoubtedly our worst danger is from malaria, and it behooves us to be constantly vigilant.

MR. C. E. PEMBERTON: Because of this danger, for the last six or seven years every incoming plane has been examined for insects. Every insect brought in is killed, collected, and carefully identified. The habits of the *Anopheles* are such that as long as we had sailboats or steamers, the danger of introducing it was almost nil. With planes, however, there is a real danger, and more and more mosquitoes might be brought in from the South Pacific. Already the *Anopheles* mosquito has been found about six times. Once a live one was caught. We all must recognize the danger, and although it is not as great as many have believed, it still is something about which we must keep constantly on the alert. At the present time all Army, Navy and civilian planes coming in are treated and examined. The Army and Navy are very definitely conscious of this danger.

COMDR. R. W. BABIONE: The life span of the *Anopheles* averages about one month. At the present time there is no danger from malaria, but we must accept the possible danger of introducing the *Anopheles*. I agree with Mr. Pemberton that the Territory should recognize the tremendous danger of introducing *Anopheles*, and everyone connected with air travel must recognize this danger and continue combatting it. Fortunately the health authorities here realize clearly how to approach this problem.

BACILLARY DYSENTERY

CHAIRMAN: Since our discussions up to this point have been largely theoretical in that all except dengue are potential dangers rather than real dangers (and apparently even dengue has been conquered) we will take up our next item, which at the present time is an actuality. For all groups, particularly where large numbers are gathered together, the dysenteries in the past have always been one of the great disability producers. Many a campaign, such as the Dardanelles campaign of the last war, has been lost because of dysentery.

DR. W. B. PATTERSON: We are now having an epidemic on Maui which began about the first of the year. We have already seen 180 cases. The source was traced back to carriers who prepared food at three luaus. It has been found among people recovering from dysentery that 30 per cent remain as carriers. Hence, once you have an epidemic the danger of continuing it is very real. As far as the disease is concerned, the form we have is only moderately severe in adults but more severe among children. We have had one death, in a child. We treat the diarrhea with saline subcutaneously, paregoric, morphine and blood plasma if necessary. At first we used sulfaguanidine, with some success. Then we used sulfasuxidine, with more success. More recently we have used sulfadiazine, and since using it we have had no failures. We not only have cured the diarrhea with sulfadiazine but have also prevented the development of, and cured, the carrier state.

To properly treat dysentery we must remember its pathology: the organisms invade the wall of the colon, forming ulcers, and at the same time reach the mesenteric lymph glands. To prevent the development of chronic dysentery and the carrier state, absorbable drugs must be used so that the organisms in the lymph glands will be killed. Sulfaguanidine is not absorbed, and is not effective beyond the lumen of the bowel; sulfadiazine is effective in the tissues, and is the drug of choice in treating dysentery. To stamp out an epidemic the carriers that do develop must be found and treated.

DR. C.: We have recently had an epidemic on a ship arriving from the south. This ship did stop at Maui. We had over 100 cases. It was a relatively mild type. We considered it largely of the Newcastle strain of the Flexner group. To say that a dysentery organism is a Flexner bacillus is not specific enough, since this is a group name in which there are many varieties. Our greatest problem is to instruct recovered cases in proper public health measures so that they will not spread the disease.

[Then various doctors discussed the problem of reducing carriers. One group had tried various things in the treatment of carriers. They confirmed DR. PATTERSON's statement that sulfaguanidine was of no use, but that large doses of sulfadiazine continued over at least five or six days after the illness was entirely overcome, and repeated if the patient still showed organisms, tended to prevent the carrier state. DR. C. was asked regarding the bacteriological examination in this disease, and he said that usually you have to "fish" a colony after twenty-four hours on a differential plate, and then culture it out as to type, which usually requires from twenty-four to seventy-two hours. This of course is too late to help the doctor in treating a case specifically.]

DR. F. D. NANCE: From my experience in Shanghai I feel very keenly about two points. First, in most

centers in America the bacillary dysentery anti-serum is condemned as useless. This I agree is true if it is not given until the third day or later. By that time no serum will be effective. If serum is given in the first twenty-four hours, however, it is one of the most dramatic therapeutic agents we have. In Shanghai we used Mulford's mixed bacillary serum, and this seemed to cover pretty well the types of organism we had there. But—to be effective it must be given in the first twenty-four hours.

My second point, and I say it positively to raise discussion, is that most American laboratories wait too long before they make a positive diagnosis of bacillary dysentery. I think DR. C. gave the usually accepted American laboratory method in which a positive diagnosis does not come for from forty-eight to seventy-two hours. This of course is too late for serum to be effective. The method we used in Shanghai—it was not original there, and has been reported many times in the literature—was the microscopic examination of a stained slide made from a drop of clear mucus fished from a dysentery stool. The mucus must be carefully fished, because not all parts of the stool are diagnostic. This actually gives the pathologic picture of what is going on in the bowel, and it is characteristic of bacillary dysentery, since no other diarrhea gives this same microscopic picture: many pus cells in various states of degeneration, and scattered large phagocytes. As soon as this appearance is seen the patient should be treated for bacillary dysentery. If it is within the first twenty-four hours the mixed serum can be used, or early in the disease, sulfaguanidine; or later, sulfadiazine or sulfathiazole. Of course this microscopic diagnostic method will not give the variety of bacillary organism. This must be worked out as DR. C. has just indicated. I do feel this is an important diagnostic method that should be used more than it is.

[Since there was no time for further discussion, plague, Weil's disease, amebic dysentery, and typhus had to be omitted. However, from some of the men on the panel who had had experience with these diseases, and from some of the discussion among the chairmen, the following material was brought out and is presented herewith.]

BUBONIC PLAGUE

During the past year Hamakua has had ten deaths from this disease. From a study of the rats and percentage of flea varieties on them, there is an indication that conditions for the possible increase of plague are definitely rising on the Hamakua coast. A Plague Committee has been appointed by the Board of

Health, and steps are being taken to reduce this menace. A supply of plague vaccine has been received from San Francisco. In the schools in the region there has been an educational program, teaching the children the meaning of disease and disease prevention, including the proper use of vaccines. Experimental evidence shows that 90 per cent of vaccinated guinea pigs are protected against plague. Dr. Bergin reported that on the first day the vaccine was offered 700 people requested it and on the second day 900. Intensive anti-plague activities are being carried on in the endemic areas of Hawaii and Maui by the public health authorities.

WEIL'S DISEASE

Dr. Alicata has just finished a survey on Hawaii with blood studies on laborers and examinations of large numbers of animals. Among cane cutters 22 per cent of the men showed positive serum agglutination tests. Undoubtedly cases of this disease occur in Hawaii in large numbers, and we should pay more attention to it, since it is evident that the 22 per cent of cane cutters were not so diagnosed when they had the disease. Recent evidence suggests that penicillin may be specific for this disease.

AMEBIC DYSENTERY

This has never been a public health problem in Hawaii. Studies indicate that about 2 per cent of our population carry *Endameba histolytica*. Badly ulcerated amebic colons are rarely seen at post mortem, and amebic abscess of the liver is rare. It is probable that infestation with the ameba is not sufficient to produce disease, but other factors, such as imbalance in diet or environmental conditions, are necessary. Apparently these conditions seldom occur in Hawaii, since this has always been a relatively rare disease here.

ENDEMIC TYPHUS FEVER

We have murine typhus with us, and every year we see a fair number of cases; and although occasionally a case is rather severely ill, most of the cases are relatively mild, some without enough signs to permit a diagnosis without a blood test. The rodent control problem is undoubtedly a difficult one in Hawaii, due to the large amount of excess food distributed everywhere, including large masses of kiawe beans almost everywhere. To keep this problem within relatively safe limits, a constant educational program must be continued, part of which must be to teach all the housewives that every bit of exposed garbage adds to the rat problem, and the rat problem adds to the disease problem.

Mimicry By Leprosy

MAJOR EDWIN K. CHUNG-HOON, MC, AUS

Leprosy simulates so many different cutaneous disorders in its mimicry that in studying cutaneous lesions in Hawaii a fairly high index of suspicion of the disease should always be maintained. A lesion may apparently present the visual characteristics of a simple dermatosis but on more careful studying prove to be one of the many manifestations of leprosy. It is to be remembered that the chief symptoms of leprosy are cutaneous lesions and anesthesia, and that the two cardinal signs in the diagnosis of the disease are (1) the finding of acid-fast organisms in the tissue juice of cutaneous lesions and (2) the finding of thermal and tactile anesthesia. In the absence of the finding of acid-fast organisms a diagnosis of leprosy can be made when there is thermal and tactile anesthesia with involvement of peripheral nerves and the presence of cutaneous lesions.

Ten kodachrome slides of various lesions of leprosy accompanied by an extemporaneous presentation of the salient features in differential diagnosis were shown. The lesions chosen exhibited a marked resemblance to the following dermatological conditions.

1. Lupus erythematosus (of face)
2. Eczematoid dermatitis (generalized)
3. Dermatitis vegetans (lower extremities)
4. Angioneurotic edema (lips)
5. Urticaria (trunk)
6. Erythema multiforme (generalized)
7. Syphilis, papular secondary (lower extremities)
8. Psoriasis, gyrate patches (lower extremities)
9. Psoriasis, discoid patches (generalized)
10. Tinea circinata (generalized)

In all instances one or both of the cardinal signs in the diagnosis of leprosy were present. A leprid that resembles lupus erythematosus lacks the characteristic follicular plugging and telangiectasia. A generalized leprous eruption resembling an eczematoid dermatitis usually lacks pruritic symptoms and its onset is more insidious. One of the commonest early manifestations of leprosy seen in Hawaii consists of wheal-like lesions of the urticaria group. Some angioneurotic-edema-like lesions cannot be differentiated without the aid of the cardinal signs, as the clinical features are almost identical. The wheals of urticaria are pruritic and more transitory than the wheal-like lesions of leprosy. Such leprous lesions are firmer in consistency and more fixed, and they lack pseudopodia

and do not itch. The lesions of erythema multiforme and the erythema-multiforme-like lesions of leprosy are identical. Both diseases produce ring forms and in both cases pruritus is usually absent. Burning or tingling sensations may be present in either case. The final diagnosis of leprosy again is based on the finding of acid-fast organisms in the tissue juices of the lesions or on the presence of anesthesia.

In addition to simulating other cutaneous disorders, leprosy and syphilis mimic each other. Papular lesions of leprosy especially when some scaling exists over the tops of the papules resemble very closely the papular secondaries of syphilis and a differentiation is difficult to make by clinical appearance. Some of the annular and circinate lesions of leprosy bear a close resemblance to those of syphilis. However, the arciform nature of the syphilitic lesion is absent in the leprous lesion, which has a more regular contour. Occasionally psoriasis-like lesions of leprosy cause confusion. The psoriasiform lesion of leprosy is a receding lesion, the scale of which is not lamellated, and when peeled off it comes away readily without leaving any minute bleeding points behind.

Leprosy is a relapsing disease, and serial slides showing the various stages of reaction in the same patient were exhibited. This patient presented a mixture of lepromatous and tuberculoid lesions with the latter predominating. The presence of both forms of lesions was proven clinically and histologically. During the quiescent phase a few tuberculoid lesions were visible over the body and a few irregularly outlined nodular infiltrations were present over the forehead and face. Probably on the basis of an allergy, the patient suddenly developed an acute exacerbation of all of the lesions present with the development of new ones over the entire body, extremities and face. The onset in this case was sudden, associated with fever ranging between 101 F. and 105 F. The patient was acutely ill and toxemic. All lesions progressed rather rapidly to a swollen, tender, beefy red stage. The entire face was swollen and red in color, and distorted by the irregular contour of the acutely inflamed condition of the soft tissues with both eyes almost closed by the beefy red swelling. The lesions were so exquisitely tender that it was impossible for the patient to masticate food as the mere movement of the facial muscles was very painful. He had to subsist on a liquid diet that required the least effort in swallowing. Even the light weight of his sheet could not be tolerated.

After about six or seven weeks of continued fever, malaise, toxicity, and tender, swollen areas of the body, face and extremities, the reaction reached its height and a gradual amelioration of symptoms en-

This is a summary of an extemporaneous talk given before the HTMA, May 5, 1944, on the differential diagnosis of the cutaneous phase of leprosy which was accompanied by the showing of kodachrome slides.

Approved for publication.

sued. The temperature gradually returned to normal; the lesions began to involute with a change in color from bright red through dark red to skin color as the edema subsided; the tenderness decreased with the subsidence of the acuteness of the cutaneous manifestation; and during the next six weeks a period of quiescence had been reached at which time the picture of the patient showed his skin to be apparently normal in color, free of lesions except for a few isolated flattened quiescent tuberculoid lesions of the trunk and a hardly discernable pink infiltration of the face. During the quiescent phase the patient felt well and he began to regain the twenty pounds of weight he had lost during his reaction. This patient has experienced three such reaction phases since his first manifestations of leprosy appeared above five years ago, and all phases lasted about three months.

The last two kodachrome slides shown were of patients exhibiting the typical lepromatous form of the disease which offers no problem in the diagnosis. These slides showed the anterior view of the face in each case, and exhibited the typical leonine countenance with heavy, irregularly outlined nodular, lepromatous infiltrations of the entire face. The ears were infiltrated, with pendulous earlobes. The forehead was corrugated and infiltrated, with complete alopecia of the eyebrows and the eye lashes, but no alopecia of the scalp. The alae nasi and lips were thick, bumpy, and distorted. In lesions of this sort acid-fast organisms occur in abundance.

In conclusion it is to be remembered that anesthesia and cutaneous lesions in a patient will in practically all instances indicate the presence of leprosy.



Proctoscopic Color Movies

CMDR. J. P. NESSELROD, MC, USNR

The advent of color photography in the field of visual education needs no further comment. Its application to certain branches of medical science, however, has not been easy of accomplishment. The successful use of color photography, both stills and movies, in recording proctosigmoidoscopic views, has been made possible largely through the efforts of my colleague, Dr. Jay M. Garner, of Winnetka, Illinois, together with the technical assistance of Mr. Joseph Brubaker, a photographic engineer, of Evanston, Illinois.

Following introductory scenes illustrating both the technique of proctosigmoidoscopy and the use of the Garner-Brubaker photographic apparatus there are shown views of normal bowel exactly as seen during the performance of routine endoscopy. The sequence includes views of distal sigmoid, rectosigmoid, rectum and anal canal. Attention is directed to the rugal folds of the sigmoid, the pulsation of the right common iliac artery transmitted through the wall of the sigmoid where it overlies this great vessel, the rectal valves, the normal submucosal vascular network, and the anal canal bordered proximally by the structures of the "dentate line."

The next sequence portrays diverticulosis. The "sacculation" of the sigmoid, described by Buie (*Practical Proctology*, W. B. Saunders Co., 1938, p. 342) is nicely shown together with several actual diverticula, each containing a small fecal mass.

The views of chronic ulcerative colitis (thrombo-ulcerative colitis of Bagen) serve to illustrate the "diffuse" involvement of the gut by this disease as compared to the "discrete" type of ulceration seen in amebic ulcerative colitis, bacillary dysentery, and tuberculous ulcerative colitis. The rugal folds have disappeared, and the rectal valve edges are rounded, roughened and retracted. The mucosal surface appears coarsely granular, or "glazed," and bleeds readily on slight trauma. This sequence ends with a view of a diaphragmatic type of inflammatory rectal stricture.

An example is shown of inflammatory rectal stricture due to venereal lymphogranuloma. The narrow-

ing is tubular and involves the rectal ampulla. One can see the extensive scar laid down in the strictured segment. It is the contraction of this scar tissue which causes the narrowing of the lumen.

For the opportunity of recording views of tuberculous ulcerative colitis Garner and I are indebted to Dr. Clement L. Martin, proctologist to the Chicago Municipal Tuberculosis Sanitarium. The ulcers are irregular in size and shape, and present slightly elevated margins and greyish-white bases. The discrete form of ulceration, with normal mucosal surface intervening amongst the ulcers, is in sharp contrast with the diffuse involvement seen in thrombo-ulcerative colitis.

There follows an excellent example of a common manifestation of anal infection, namely an anal fissure with a sentinel tag at its distal margin and a hypertrophied anal papilla immediately proximal to it.

The subject of polypoid disease is of great importance, both from the standpoint of prevention of malignant disease of the terminal gut and from that of early diagnosis of malignancy. Views are shown of a single polyp, of the appearance of the polyp immediately following fulguration, and of the site of the fulgurated polyp after one week, at which time a healing "factual" ulcer is seen. Next are shown examples of multiple polypoid disease, in which the prognosis is much more serious and the problem of treatment is by no means an easy one.

Examples are presented of carcinoma of the rectum and of carcinoma of the sigmoid. In both instances the patient had been treated for several months for "colitis" before any attempt was made at a thorough clinical investigation. I wish to stress the fact that no study of the colon is complete without adequate stool tests, proctosigmoidoscopic examination, and roentgenologic study (including contrast studies). It is indeed lamentable that so many physicians still fail, for one reason or another, to do a digital exploration of the patient's rectum!

Dr. Garner and I are indeed grateful for this opportunity of presenting the results of our work to the members and guests of the Hawaii Territorial Medical Association.

The opinions and assertions contained herein are those of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

Discussion of color movies shown before the 54th annual meeting of the Hawaii Territorial Medical Association, May 5, 1944.



For some women the climacteric is practically uneventful except for the cessation of menstrual function. To others the cessation of ovarian activity becomes a crisis to themselves and their families.

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EDITORIALS

PROCUREMENT AND ASSIGNMENT

Procurement and Assignment Service is burdened with heavy responsibilities, and the work has become steadily more complex with doubled accent on the availability of adequate medical service to war industries, to thinly populated districts, to essential institutions, and to the civilian population as a whole, and on procuring sufficient physicians to supply a still expanding Army and Navy. There are now 54,100 medical men in the military service, of which 43,195 are in the Army and 10,905 in the Navy. The physicians in the armed services are volunteers and not draftees, and the public should be kept aware of this. It is increasingly important to maintain the war records of physicians in the military service and to preserve the local economic and professional interests of absent members.

Twelve hundred doctors have been deferred. Since the war there has been an annual deficiency of about 2,200 physicians with none available for the civilian population excepting those in the 4-F classification, and women. It is estimated that there have been about 4½ million men disqualified for military service for mental and physical reasons, and this work has in the main been done by the volunteer efforts of the civilian medical men serving the draft boards.

After July 1, 1944, no further deferment is being granted by the Army or Navy for students over 18 years of age. At the present time there is about a 40 per cent decrease in enrollment in the medical schools. There are approximately 6,440 available places for medical students in this current year. Of this number 28 per cent, or 1,800, are assigned to the Army, and 25 per cent, or about 1,600, to the Navy. The other 3,000 places are to be filled by students of 4-F classification, and women.

Pre-medical students in school since February 1944 will come under Selective Service for deferment as civilians on the merits of each individual case.

The proposal now is to recall men who have had two years of continuous foreign duty, place them on an inactive-duty roster, and allow them to return to medical schools to complete their education, allowing the medical schools full authority to select such personnel.

For the Intern and Resident class there are two general groups, one qualified for military duty, and the other group with 4-F classification. Re-examination is recommended for those in the 4-F classification with the likelihood that a good percentage will receive commissions because of the reduced standards for physical requirements. This is in part due to constantly changing and lowering of physical qualifications, and also makes it possible for Procurement and Assignment Service to request re-examination of anyone previously disqualified, if for any reason it is believed he will pass the less rigid examination, unless he has voluntarily assumed an essential position acceptable to Procurement and Assignment Service. In other words, the individual who was disqualified on one examination alone might qualify on re-examination at a later date due to the change in physical standards, an improvement in his physical condition, or disqualification due to a possible error. To that end, Procurement and Assignment Service may request the re-examination of 4-F men, and if qualified on re-examination they will be permitted to complete the contracts made during their 4-F status. A directive is now being prepared for the State Chairmen to consider the 4-F men essential, irrespective of their successful physical examinations, until their obligational contract has been fulfilled.

The Queen's Hospital, being the only hospital accredited for intern training in the Territory, is now entitled to eight Interns and four Residents, the Residents being in Pathology, Medicine, Psychiatry, and Mixed. Under the present regulations, we are allowed, upon application, the deferment of one-third of our Intern personnel for an additional nine months for residency in one of the four above-mentioned

services. Thus, upon application, three Interns, physically qualified for military duty, may be deferred from active duty in the armed services. We are also allowed an additional one-third of the four in the Resident group for an additional nine months—so it is possible for one Intern to serve at the Queen's Hospital for twenty-seven months—nine months as an Intern, nine months as a Resident in one of the four services, and an additional nine months for advanced residency in one of the four services or some especially selected residency under terms of agreement.

To date, since the functioning of Procurement and Assignment Service in the Territory, 8 physicians have entered the armed services, 7 are waiting for decision from Washington, 6 have been disqualified for physical disabilities, 15 have been disqualified for other reasons, and 7 are deferred awaiting replacements.

Forty-three physicians from the Territory were on active duty in the Army or Navy previous to the activation of Procurement and Assignment Service in the Territory (29 Caucasians, 8 Chinese, 5 Japanese, 1 Caucasian-Hawaiian).

A letter was written recently by P. & A. S. to all of the Physicians who were disqualified, suggesting that they might yet be of some service in the war effort by volunteering their services on a part-time basis in some one of the institutions sadly in need of professional assistance. The response to every letter, excepting one, was very cordial indeed and indicated a sincerity of purpose and a patriotic attitude and genuine desire to serve wherever they could best be of use.

A careful analysis of the patient load per practicing physician for the Territory suggests that Hawaii has now supplied about as many physicians as can be spared from the community without seriously disrupting adequate medical care for the civilian population. The vast majority of the physicians remaining in civilian practice are expending maximum efforts and doing their part in the war effort by their care of the civilians. While it is true that a small number of physicians are working no harder today than before the war, it must be said to the credit of the profession that such instances are not common. It is the responsibility of the medical profession to organize themselves in such a way as to give adequate medical care not only during the peak hours of the day but also essential care for emergency treatment at night. We are advised that it is difficult for a patient to get medical care in the form of home visits during the night. Your attention is respectfully called to this situation.

Recommendations by your local Procurement and Assignment Service chairman have already been submitted requesting an additional allocation of Interns for local hospitals on the basis of increased required services, increased number of beds being added to our

hospitals, and the increased turn-over of patients due to the acceleration of hospital medical and surgical care.

Fourteen physicians of Japanese ancestry have been declared available for Military Service. To date the results of these applications for a commission in the Army are: Seven have been refused because of physical disqualifications, and five have been denied a commission for the reason "no appropriate vacancy."

The chairman of Procurement and Assignment Service has conferred at length with the officials in Washington as well as with local officials in an endeavor to have the Japanese physicians accepted by the Army, but it is apparent, for the present at least, that the War Department will not consider the granting of a commission to them.

The board of P. & A. S. has used every influence to maintain a racial balance in declaring the physicians of the Territory available for military service, and it is regrettable that these Japanese physicians who have made application for a commission have not been accepted.

F. J. PINKERTON, M.D.

THE HAWAII HEALTH MESSENGER

The Hawaii Health Messenger, the official monthly organ of the Hawaii Territorial Board of Health, appeared in a new format in the first number of its fourth volume, the July, 1944, issue. It has been almost doubled in size, and now consists of four pages, each 8½ by 11½ inches. The Editor, Dr. C. L. Wilbar, Jr., President of the Board of Health, says it will now usually offer two short articles and one long one, in addition to an editorial, a review of current public health activities, and statistical reports.

In this issue is an article by Elmer J. Anderson, Acting Director of Public Health Education, in which an estimate of the 1944 population of the Territory of Hawaii is presented. It is modestly described as a "guess," but it is more than that; it is arrived at by careful evaluation of all available sources of information, including knowledge of percentage rates of change for each racial group. Some of the conclusions are of particular interest. For example, there has been during the war a decided drop in the population of every outside island in the Territory; only the City and County of Honolulu showed an increase, which was sufficient to raise the total population of the Territory from—in round numbers—465,000 to 492,000. Two-thirds of the increase was in the "other Caucasian" group, and the remainder chiefly in the part-Hawaiian and the Japanese groups.

There is an article on Plague Control by Past Assistant Engineer Kaarlo W. Nasi, Acting Director of Rodent Control; an article on Health Trends, analyzing the communicable disease statistics for May

and June, and a column entitled Personnel, in which Dr. Robert H. Marks, here from Rochester, New York, to head the Bureau of Tuberculosis, is welcomed to the Territory.

THE BUREAU OF MATERNAL AND CHILD HEALTH: A SERVICE TO PHYSICIANS OF HAWAII

In the last issue of this journal the editorial department expressed the fear that the Bureau of Maternal and Child Health of the Territorial Board of Health, disguised as a wolf in sheep's clothing, was attempting to insert the foot of socialized medicine in the door. The basis of that fear was an article of mine entitled "*War-time Activities in Maternal and Child Health*" which appeared in the May issue of the Hawaii Health Messenger.

My two-page article included comments on the subject of pregnant women at work, day care for children, school lunches, general nutrition, recreational facilities for children and adolescents and other health matters which have become acute problems as a result of the war. Those same problems to a lesser degree were with us before December 7th and yet throughout the country it took a war to start programs aiming at their solution. Surely, we all realize that those same problems will remain with us after the war. In the article quoted in this journal, I expressed the hope that the community would continue in the post-war period to be interested in such health services to individuals even though there no longer exists the need to mobilize those individuals for a total war effort.

Ten lines of my 170-line article on wartime activities were devoted to the program of Emergency Maternal and Infant Care for military dependents. The editors of the HAWAII MEDICAL JOURNAL chose to pluck those ten lines from the middle of the article and tie them together with the closing paragraph as evidence that I personally was inserting the disguised foot of socialized medicine in the door. Considerable discussion on the EMIC program has taken place in Hawaii, as elsewhere in the country. It is proper for the Medical Society to look carefully into the future implications of all current medical practices. But for spokesmen to indulge in name calling and personal attacks upon those mandated with the local administration of the program is not a constructive method of improving that program and tends to undermine the broader purposes of the Maternal and Child Health Bureau.

At the annual meeting of the Territorial Medical Association in May of this year the Maternal and Child Health Advisory Committee of the Association made the following statement:

"That the Committee express approval of the manner in which the Director of the Bureau of Maternal and Child Health has attempted to take into consideration special Territorial needs in the application of the program to Hawaii.

"That the Medical Society request that the Director of the Bureau of Maternal and Child Health be given more opportunity by the Children's Bureau for independence of action in deviating from the set features of the national program so that he may collaborate better with the Territorial Medical Society in obtaining more satisfactory modification of the program to meet the special needs of the Territory."

That statement, subsequently endorsed by the Council of the Association, indicated full recognition of the difficulties under which the local administrators of the EMIC program have labored, throughout which difficulties the director personally kept the point of view of the private physician ever in the forefront. In every one of our bureau activities we constantly emphasize the essential role of the practicing physician. Child health conferences without doubt deserve first credit in developing in the parents of the community the habit of taking well children to their doctor regularly. Maternal health conferences teach women to seek prenatal care of their physician early in pregnancy. Steering children to the doctor is the essence of all our school health services.

EMIC is a small part of the Bureau of Maternal and Child Health program. In EMIC and its other activities the Bureau genuinely and sincerely aims to be of service to the practicing physicians of Hawaii in an effort, jointly with those physicians, to attain the highest possible health standards for mothers and children. Such cooperative efforts over the past decade have progressively lowered maternal and infant mortality until this year once more all territorial records have been bettered. *All together, let's keep on going.*

SAMUEL M. WISHIK, M.D.

Director, Bureau of
Maternal and Child Health

To the Editor:

We as the Directors of the City and County Nurses' Association wish to express to you our reaction upon reading the editorial in the JOURNAL for March-April 1944 entitled "The Bedside Nurse."

Many of the statements in this editorial do not agree with the accepted standards of modern nursing education and practice which this Association has believed in and worked to maintain. As a group who have worked not only to maintain professional standards in nursing but also to improve the care of patients, we protest these statements. We find it difficult to believe that such statements represent the opinion of any reputable professional person who has been closely associated with the nursing profession.

At the regular monthly meeting in June the members of the Association present went on record as protesting these statements.

(Miss) HELEN BATEMAN
President Nurses' Association
City and County of Honolulu

To the Editor:

The Trustees of the Nurses' Association Territory of Hawaii at their last meeting discussed an editorial in the HAWAII MEDICAL JOURNAL of March-April 1944 which quoted abstracts from the address "The Present Status of Nursing" by Dr. E. M. Bluestone. We wish to go on record as expressing the opinion your editorial creates the wrong impression of the address by Dr. Bluestone which is printed in entirety in the May 1944 issue of *Hospital Management*.

Dr. Bluestone does not denounce education for all nurses but suggests nursing education be planned for the type of nursing that the nurse will be required to perform. We quote from his address as follows:

"We must identify and classify nursing specialties and plan separately for them with bedside nursing as a prerequisite to a higher education."

"At the same time we must plan for the graduate education of selected bedside nurses who have a better educational background and whose talents and intellectual attainments can be used to special advantage."

We hope that the editorial does not express the sentiments of the medical profession of the Territory with regard to nurses' education for our experience as nurses has led us to believe that the physicians of Hawaii appreciate and want intelligent, well educated nurses.

ELIZABETH MARKS
Secretary

HAWAII SOCIETY OF CLINICAL PATHOLOGISTS

The Hawaii Society of Clinical Pathologists held a tumor seminar meeting at Tripler General Hospital, Farrington Division, on the evening of Sept. 6, 1944. Slides from seven cases previously mailed to the members were thrown upon a screen and discussed. Refreshments were served by the Army after the meet-

ing. The following men were present: Cmdr. O. A. Brines, M.C., U.S.N.R., Capt. L. E. Field M.C., Capt. Irving Chapman, M.C., Capt. R. Gordon Brown, M.C., Capt. William Levison, M.C., Lt. Louis Hirsch, M.C., Major Elson B. Helwig, M.C., Capt. Jack A. Dillahunt, M.C., Capt. Fred Dick, Jr., M.C., Major David L. Adler, M.C., Capt. Welland A. Hause, M.C., I. L. Tilden, M.D., and Lt. Col. Carl F. Tessmer, M.C.

BOOK REVIEW

A 107-page loose-leaf manual entitled "Current Laboratory Procedures" recently compiled by Dr. Bernard Witlin of the Board of Health should prove very useful, not only to laboratory workers, but to practising physicians as well.

The first section is arranged in the form of a table listing diseases reportable in the Territory of Hawaii, together with the laboratory procedures performed in each disease by the Board of Health Laboratories. Information regarding isolation, quarantine and food handling is also included in the table.

The second section (pp. 9-16) is concerned with methods of collections of specimens for laboratory examination. The third section (pp. 17-19) is a brief discussion of carriers and the carrier state in diphtheria, malaria, typhoid fever, and amebic and bacillary dysentery. The fourth section (pp. 21-22) details the postal laws and regulations regarding the transmission of diseased tissues and material of infectious nature through the mails.

Section five (pp. 23-84) lists the technique of current laboratory procedures in use at the Board of Health Laboratories. These are, for the most part, standard ones in wide use. The following large tables and charts (as well as many smaller ones) are included: (1) Bacteriology Reaction Chart (Enteric Diseases), (2) Serologic Classification of Enteric Diseases, (3) Comparison of *Endameba Histolytica* with two Common Non-pathogenic *Amoebs*, (4) Eggs of Parasites Found in the Human, (5) Malaria Parasites, (6) Jackson Classification of Colon Group, (7) Key to the Classification of Coliform Organisms, (8) Relative Proportions of Some of the Members of the Coliform Group Found in Human and Animal Feces and (9) Distribution of Coliform Organisms from Different Sources Among the Various Species and Varieties.

Mention is not made of the use of para-aminobenzoic acid in culture media to counteract the bacteriostatic action of the sulfonamides. It appears to be well established that this substance in a concentration of 5 milligrams per cent in culture media effectively inhibits sulfa drug action and permits the or-

ganisms to grow out. This is particularly important in blood cultures. Pneumococci can sometimes be successfully typed in the sputum from a patient receiving a sulfonamide if the sputum is mixed with equal parts of a saturated solution of para-aminobenzoic acid. Otherwise the Quellung or Neufeld reaction can not be obtained.

A procedure for the quantitative determination of spinal fluid protein, a very important consideration in many central nervous system diseases, is not included.

The last section (pp. 85-101) gives directions for making culture media, reagents and stains. Canada balsam is recommended as a mounting agent; actually

it is far inferior to gum damar which dries faster and does not turn yellow with age.

It is extremely difficult to obtain uniform results in clinical pathology, primarily because laboratories use different methods, or fail to adhere to the techniques of standard methods. Consequently the results from different laboratories are apt to be wildly discrepant and highly confusing to clinician, technologist and pathologist alike. This is particularly true of various serologic tests, especially serologic tests for syphilis, and chemical procedures. Dr. Witlin's manual should serve a useful purpose in the Territory toward the end of uniformity of laboratory results.

I. L. TILDEN, M.D.





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CLINICAL NOTES

OBSTETRICAL CAUDAL ANESTHESIA: A MOTION PICTURE

A thirty-minute motion picture in 16 mm. Kodachrome was presented. Demonstrated by means of this film were technics of caudal anesthesia, using the flexible Lemmon needle, stiff steel spinal needle, and the small ureteral catheter. Three deliveries under caudal anesthesia, primipara, multipara and forceps, were shown, illustrating the convenience of the anesthesia and the complete absence of pain for the patient, although she is entirely conscious in all cases.

A special point was made of the catheter introducer with the dull point. A No. 15 needle with a sharp obturator is pushed through the skin and sacral-coccygeal ligament. As soon as the ligament has been punctured, the needle is stopped and the sharp obturator withdrawn. This is now replaced by a ball-point obturator which, together with the needle, is pushed on into the sacral canal. We have found that this cuts down enormously on the amount of bleeding and practically eliminates the possibility of entering either a vein or the dura, which has been demonstrated at autopsy to be relatively tough.

A No. 4 ureteral catheter is introduced about 7 centimeters through the No. 15 needle and firmly anchored in place with adhesive tape. The No. 15 needle is withdrawn over the catheter before the catheter is attached to the pressure tubing and syringe. The catheter makes a flexible, unbreakable, and very convenient method of administering continuous caudal anesthesia. The new catheters are made of nylon and are resistant to sterilization at high temperature. Ether or benzine may be used to clean adhesive tape from the catheter without damage.

The motion picture was ably discussed by Commander Price, who reported experience with over 700 deliveries under continuous caudal anesthesia. While pointing out the usual restrictions and safeguards, and the fact that the method is not adaptable to all cases, Commander Price was nevertheless in favor of this method of anesthesia and recommended its wider application.

The meeting was then thrown open for discussion during which there were many comments and questions. Eight of those present stated that they had used continuous caudal anesthesia, but due to wartime shortage of nurses in the Honolulu hospitals, exten-

sive use is not practical. Widespread use on the mainland suggests that future use in Honolulu will be greatly increased. Drs. Liljestrand and Warshauer pointed out that the plantation hospitals are also understaffed, but that the problem has been solved temporarily by the use of carefully trained nursing personnel. Caudal anesthesia requires no greater nursing care and medical supervision than any other of the modern methods of producing obstetric anesthesia or analgesia. As a matter of fact, the patient under caudal anesthesia is much easier to handle than the irrational restless patient under scopolamine-sedative combinations.

P. H. LILJESTRAND, M.D., and
F. B. WARSHAUER, M.D.

Aiea, Oahu.

NEUROLOGIC ASPECT OF VASCULAR INJURIES

Trauma to the larger blood vessels may produce massive hemorrhage requiring ligation. In certain instances this may seriously impair the blood supply to an extremity. This resulting impairment of circulation is due not alone to the mechanical interruption of the blood flow, but also to vasoconstriction involving the collateral network of vessels.

When an injury to a blood vessel occurs, afferent nerves are stimulated, causing a stream of impulses which are relayed in the spinal cord to efferent nerves of the sympathetic system and cause vasoconstriction in the collateral blood vessels in the vicinity of the damaged vessel. This effect is considerable, for, where it is abolished, ligation of most large vessels can be carried out without serious danger of gangrene.

It has been shown in dogs that when the aorta is ligated at its bifurcation, gangrene develops in the hind limbs and they die in seven to ten days. If, however, a bilateral lumbar sympathectomy is done when the aorta is ligated, gangrene does not develop and the animals survive.

Movie shown before the 54th annual meeting of the Hawaii Territorial Medical Association, May 5, 1944.

Read before the 54th annual meeting of the Hawaii Territorial Medical Association, May 5, 1944.

It is, therefore, of major importance to abolish this secondary vasoconstriction whenever ligation of a large vessel seriously threatens survival of the limb. This can be done, theoretically, by interrupting these impulses at any point in the reflex arc.

Often much can be accomplished by denervating the vessel at the point of injury. If an artery is involved, it should be stripped of its adventitial coat (which contains many nerves) for a considerable distance, particularly proximal to the injury. It is important to completely divide the vessel, when ligating it, as this also divides the nerves.

The secondary vasoconstriction can be more nearly completely abolished by blocking the sympathetic chain. This can be temporarily accomplished by a paravertebral novocain injection and made virtually permanent by using alcohol. This should be done in the cervicodorsal region if the upper extremity is involved and in the lumbar region if the lower extremity is affected.

Surgical excision of the ganglionated sympathetic chain is more certain and should be seriously considered if survival of the limb is threatened and the condition of the patient permits. The temporary effect of a novocain block or a spinal anesthesia may be of great assistance in determining the increase in circulation that may be expected from a sympathectomy.

Circulatory disturbances often follow injuries of the vessels where the wall is not lacerated, and also in certain nerve injuries. In these cases, gangrene of limb is seldom threatened but distressing pain and disability may result. Appropriate sympathectomy may be followed by marked improvement in these patients.

CMDR. EXUM B. WALKER, MC, USNR

USE OF PENICILLIN IN A CASE OF MULTIPLE BRAIN ABSCESES

Here is the story of a man who would now have been dead except for the use of penicillin. This statement is not so startling in this day when there appear in increasing numbers recordings of the survival of patients with infections which heretofore have been considered fatal. There are, however, other points which justify comment. For example, he would not have survived had he not also received surgical treatment. In addition, the behavior of the wound healing of his affected tissues is worthy of note.

The opinions and assertions contained herein are those of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

It is not necessary to report this case in detail in order to point out the lessons learned. Briefly, this thirty-three-year-old man's infection began with an acute frontal sinusitis which spread extensively. There was a subgaleal abscess, osteomyelitis of the frontal region of the skull, extradural granulation tissue with pockets of pus, left orbital abscess, extensive subdural infection with five separate collections of subdural pus, two of which extended into the brain and a diffuse meningitis of the right cerebral hemisphere. The intracranial abscesses were confined to the right side but involved all of the lobes, being scattered from the frontal to the occipital regions.

When seen three weeks after his first symptom of frontal headache, he was stuporous and had signs of meningeal irritation, increased intracranial pressure, and a left hemiplegia. He had been receiving penicillin for four days without lowering his temperature and he was becoming more deeply comatose. Penicillin was administered without interruption at an average dosage of 20,000 units, intramuscularly, every three hours for forty-one days. In all, he received 5,710,000 units. He was operated upon 7 times over a period of twenty-six days, draining pus from a separate region on each occasion. This included total removal of his frontal sinus and much of his frontal bone and the drainage of multiple intracranial abscesses. Ventriculography was resorted to twice to aid in localizing the abscesses. Those of you who have had neurosurgical experience may well appreciate the difficulties which were involved in localizing five separate intracranial abscesses in so desperately ill a patient.

He also received supportive measures, such as multiple transfusions, and detailed nursing care, including nasal feedings and frequent use of suction to keep the respiratory passages clear of mucus.

During his illness he lapsed into coma and became hemiplegic on three separate occasions as new intracranial abscesses developed or old ones increased in size. On each of these occasions surgical drainage resulted in a prompt return of consciousness and recovery from his hemiplegia. His final recovery has been complete and lasting and we have no reason to expect a recurrence.

Staphylococcus aureus was identified in the smear and culture taken from the frontal sinus and frontal lobe abscess. The cultures of all other abscesses were sterile, though smears of two of the intracranial abscesses showed *staphylococcus*.

It was interesting to observe that immediately following the surgical drainage of the active source of the infection, that is, the frontal sinus and contiguous regions, his temperature dropped to normal and remained practically so throughout his illness. There were small elevations following some of the operative procedures and a sharp transitory rise following a transfusion. This control of the temperature was

assumed to be the result of the penicillin. That the penicillin did not prevent the continued progress of the intracranial abscesses and that surgical drainage was necessary, is apparent. The penicillin did, however, sufficiently forestall the spread of infection so that ultimately all significant localized collections of pus were located and drained.

Perhaps most interesting of all was the total absence of gross inflammation usually present in infected operative wounds. With two exceptions all incisions were sutured completely without leaving any drains in spite of the presence of granulation tissue and collections of pus as large as 40 cc. At one session the frontal sinus was removed along with osteomyelitic frontal bone and a large frontal lobe abscess drained. At variance with the usual custom, the scalp flap was closed except at one point where a small rubber drain was placed. Within twenty-four hours the dressing was only slightly stained. The drain was removed and there was no further drainage, the wound being sealed the following day. A similar

experience was encountered when another large abscess was drained. In retrospect, it would seem that the use of these drains was probably unnecessary and possibly even harmful. It must be recounted that in all but one instance the pus was sterile on culture, no doubt a result of the penicillin. Even so, the rapid healing without the slightest trace of redness or moisture about the sutures was remarkable.

Here, then, is a report of a case where survival depended upon the combination of penicillin and successful surgical treatment. It is apparent that either, alone, would have been futile.

One cannot refrain from speculating on the changes which are ahead in the surgical management of infections where collections of pus occur. It seems likely that in many instances the time-worn custom of incision and open drainage of abscess cavities may well be replaced by simple aspiration supplemented by the administration of penicillin.

CMDR. EXUM B. WALKER, MC, USNR

The American Physiotherapy Association

Code of Ethics and Discipline

(Adopted at A. P. A. Convention, Atlantic City, June, 1935)

2

I. PROFESSIONAL PRACTICE

- a. Diagnosing, stating of the prognosis of a case, and prescribing of treatment shall be entirely the responsibility of the physician. Any assumption of this responsibility by one of our members shall be considered unethical.
- b. The patient shall be referred back to the physician for periodical examinations.
- c. A member shall not attempt to criticize the physician or dictate technique or procedure.

II. ADVERTISING

- a. Members shall not procure patients by means of solicitors, agents, circulars, displays, or advertisements inserted in commercial periodicals.
- b. Announcements in medical journals or business cards, not stating fees, are permissible. A statement that the work is medically supervised should appear on the announcement.
- c. A member may use the term "Physiotherapist" or "Physical Therapist" on an office door.

III. BEHAVIOR

- a. Members shall not indulge, before patients, in criticism of doctors, co-workers, or predecessors who have handled the case.
- b. It is well to bear in mind that our reputation as individuals and a group depends upon professional accomplishments and upon adherence to the standards of our organization.

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Charges and evidence against offenders will be weighed and acted upon by the Executive Committee.

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- Percentage of dues' income used for oper-
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Penicillin-C.S.C.—available as penicillin calcium as well as penicillin sodium—is packaged only in rubber-stoppered serum-type vials containing 100,000 Oxford Units. The vials are used in preference to sealed ampuls because they make for greater convenience in storing the solution and because they lessen the danger of contamination after the solution is made.

Only vials of 100,000 units are offered at present because experience designates them as the most advantageous size. If there IS a factor in therapy which may undermine or lessen the remarkable therapeutic efficacy of penicillin, it may be underdosage. Even if ther-

apy is instituted late in the course of the disease, penicillin in many instances will prove effective if adequately high dosage is used for the proper length of time.

In the conditions so far explored and reported, effective dosage in some instances will be less than 100,000 units per day; in many instances it may have to be several times this amount. Hence in a large percentage of cases the Penicillin-C.S.C. vial of 100,000 units will prove most advantageous.

The convenience of the vial will be readily appreciated. After removal of the tear-off portion of the aluminum seal, sterilize the exposed surface of the rubber stopper



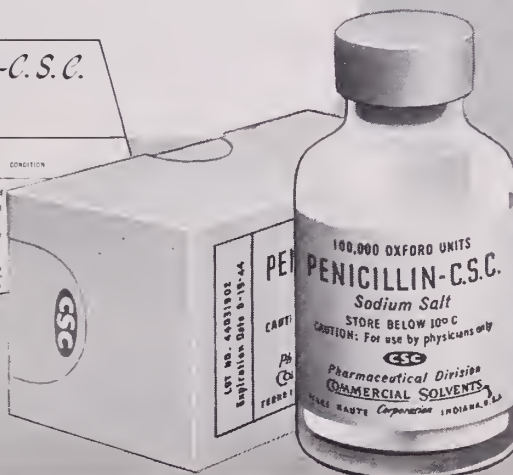
For the usual concentration (5000 Oxford Units per cc.) inject 20 cc. of physiologic salt solution into the vial in the usual aseptic procedure.



Invert the vial and syringe (with needle in vial), and withdraw the amount of penicillin solution required for the first injection.



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CLINICO-PATHOLOGIC COMMENT

EVALUATION OF LABORATORIES APPROVED TO CONDUCT PRENATAL SEROLOGIC TESTS FOR SYPHILIS, JUNE, 1944

Thirty laboratories, including those of the Board of Health, expressed their desire to participate in the serologic evaluation held on June 6, 1944. Through the cooperation of the Territorial Hospital for the Mentally Ill, blood specimens were obtained from ten individuals with varied serologic pictures. While ten specimens may not be considered sufficient to gauge the sensitivity and specificity of serologic results, it was felt that these, with subsequent evaluations at frequent intervals, would meet the practical needs of the community satisfactorily. Identical specimens were submitted to all the participating laboratories under code numbers. Each laboratory was given an identifying number by means of which it could compare its findings with the results of the other participants, whose identities were also concealed by identifying numbers.

One complement-fixation test, the Kolmer, and three standard flocculation tests, the Kahn, Kline, and Eagle, were performed by the participating laboratories.

Twenty-seven of the thirty laboratories taking part performed Kahn tests. Seven did the Kahn test alone, twelve the Kahn in conjunction with Kolmers, three the Kahn with Klines and three did Kahns with Eagles. Thirteen laboratories performed Kolmer tests, all of them along with one or more flocculation tests.

This was an evaluation of laboratories and not of the specificity or sensitivity of any given serologic test for syphilis. Two sera (6 and 7) were from normal donors. The remaining specimens came from untreated and treated cases of syphilis with varied reagin titers.

Four of the twenty-seven laboratories performing Kahn tests reported unsatisfactory readings. Three laboratories reported low readings and one laboratory had readings which were too sensitive. Nine laboratories failed to interpret the results of their Kahn tests properly for one or more of the specimens. The interpretation of Kahn tests was guided by U. S. Public Health Service Supplement No. 9 to Venereal Disease Information, 1939 (pages 190-191). "A total of 6 pluses to 12 pluses on the three tubes be reported *Positive*. A total of 2½ pluses to 5 pluses on the three tubes be reported *Doubtful*. A total of 2 pluses or less be reported *Negative*."

Two of the thirteen laboratories performing Kolmer complement-fixation tests showed low sensitivity. Two other laboratories in this group reported tube readings with their anticomplementary findings. If a blood is anticomplementary the tube readings are not valid and should not be reported.

One of the seven laboratories performing Eagle tests reported a positive specimen as negative.

The three laboratories conducting Kline tests were in full agreement.

One laboratory performing Kahn tests read two four-plus sera as negative, three four-plus sera as doubtful, and three doubtful sera as negative. Performing Kolmer tests, this laboratory reported two four-plus sera as doubtful and one anticomplementary serum as positive.

One new applicant laboratory, in complete disagreement with all the other laboratories, reported "peaked" readings for Kahn tests on three four-plus specimens (*i.e.* tube readings of 1, 2, 1). Such readings, according to Kahn, never occur. This laboratory interpreted three identical readings (1, 2, 1) as positives in two instances and doubtful in one.

The results of this evaluation test revealed that with the exception of a few laboratories, the serologic work performed by the laboratories throughout the Territory of Hawaii continues to be of high quality. The degree of uniformity among the majority of the laboratories evaluated represents the upper limit attainable with the technical methods now available.

On the basis of the results of the aforementioned evaluation, the following 28 laboratories have been approved by the Board of Health to conduct prenatal serologic tests for syphilis during the current fiscal year:

OAHU

Ewa Plantation Hospital Laboratory
Dr. Pinkerton's Laboratory
Honolulu Peacetime Blood Plasma Bank Laboratory
Queen's Hospital Laboratory
Kuakini Hospital Laboratory
Alsup Clinic Laboratory
Leahi Hospital Laboratory
Fronk-Wynn Clinic Laboratory
Drs. Batten & Bell Laboratory
St. Francis Hospital Laboratory
C&C Emergency Hospital Laboratory
Drs. Culpepper & Bailey Laboratory

Kahuku Hospital Laboratory
 Dr. Saunders' Laboratory
 The Clinic Laboratory
 The Medical Group Laboratory
 Kapiolani Maternity & Gynecological Hospital Laboratory
 Honolulu Board of Health Laboratory

HAWAII

Hilo Memorial Hospital Laboratory
 Puumaile Hospital Laboratory
 Hilo Board of Health Laboratory

MAUI

Kula Sanatorium Laboratory
 Malulani Hospital Laboratory

Puunene Hospital Laboratory
 Paia Hospital Laboratory
 Wailuku Board of Health Laboratory

KAUAI

Kauai Medical Society Laboratory

MOLOKAI

Molokai Board of Health Laboratory

BERNARD WITLIN, Sc.D.*

* Bacteriologist, U. S. Public Health Service, States Relations Division assigned to the Board of Health, Territory of Hawaii.





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NEUROPSYCHIATRIC COMMENT

REHABILITATION FROM THE PSYCHIATRIC POINT OF VIEW

The term rehabilitation, as most often used today, refers to restoration of war veterans handicapped by disease or injury, to as normal a physical and mental state as possible. It will be so used in this paper without, it is hoped, causing the reader to forget that similar restoration is direly needed by many civilians as well, including those rejected by the Selective Service System.

The Problem

A few statistics will demonstrate the magnitude of the problem from the psychiatric point of view. Before the war, in 1940, four million persons suffered from permanent physical disabilities and the annual increase was 800,000. Today, these figures have increased to staggering proportions¹.

Today, nearly twenty-five years after the end of the last war, nearly half of the 67,000 beds in veterans' hospitals are occupied by the neuropsychiatric casualties of World War I, which have already cost the country over a billion dollars².

Of 2,870,000 men rejected by the Selective Service System up to April 30, 1943, the largest single group—some 400,000 men—were rejected for psychiatric reasons². From December 7, 1941, to May 1944, the Army alone rejected 1,340,000 men for neuropsychiatric causes and discharged 216,000. These figures would have been even higher if the men in Army neuropsychiatric wards had been included³.

Rejections in this war were considerably higher; hence the discharge rate has been lower than in World War I. Even so, by February 1944 an estimated 300,000 men were discharged from the services for psychiatric reasons and this number was then increasing by about 30,000 per month. This figure was 45 per cent or nearly half of the total discharges. Veterans' facilities in February 1944 had 87,486 beds, of which 34,798 were set aside for neuropsychiatric cases. Plans were under way to increase the capacity to 100,000 and eventually—long after the war—to 300,000⁴.

No new types of mental disorder have been encountered in this war⁵. All of the familiar psychoses are being seen, with schizophrenia and the manic-depressives heading the list. Cases of organic mental disease are relatively rare. Psychoneuroses comprise the largest group in the Army both in combat zones

and in the training areas. In numerical order, they are (a) anxiety states, (b) conversion hysteria, and (c) reactive depressions. Constitutional psychopaths make up a large group of individuals who are most undesirable. Their numbers are about the same as in times of peace⁶. The psychoneuroses of war with minor exceptions are the same as those of peace². The form which they take depends primarily on the individual's personality and usual pattern of behavior.

There have been relatively few cases of psychosis and psychoneurosis due to the war alone⁷. Nevertheless, we are faced with the problem of a large number of men recognized for the first time as suffering from neuropsychiatric disability. Considerable trauma, social and psychic, has been administered to rejectees from the Selective Service System. Discharge from the Army for neuropsychiatric reasons has increased emotional difficulties in many of those so discharged. In addition, a multitude of emotional problems has arisen in those released because of physical handicap.

The many neuropsychiatric cases rejected or discharged from the United States fighting services are not creations of the psychiatrists, in spite of remarks in the *Christian Century*⁸ and those of Henry Link, Ph.D., in the July 1944 *American Mercury*. It is ridiculous to assume that psychiatrists are responsible for 1,340,000 rejections at the draft boards. This statement is an example of a careless use of figures. Flattered as the psychiatrists might be by such a record, it must be admitted that 536,000 of that number (apparently unbeknownst to Dr. Link) were rejected for mental deficiency by *psychologists*, and the remaining 802,000 included many with histories of infantile paralysis and other conditions not ordinarily classed as psychiatric⁹.

The success of readjustment of returning veterans depends to a considerable degree upon the personalities present before entry into the service. Most persons discharged for physical reasons are sufficiently stable so as not to constitute psychiatric problems. Most of those discharged for neuropsychiatric reasons will be useful and productive citizens if some thought is given to the type of work they are required to do. Discharge in many cases simply meant that the strict regimentation of Army life disclosed peculiarities in behavior which rendered the individuals unfitted for the rigid requirements of combat duty. Employers should be willing to employ such discharges if a reliable psychiatrist says they are suitable for a job.

Rehabilitation Machinery

Many private and official agencies are cooperating in the work of rehabilitation. The government machinery can be divided¹⁰ into three broad categories: (a) Before discharge, it is the responsibility of the Army and Navy to do remedial work through their medical facilities. At the same time, the Army Emergency Relief and the Red Cross have the responsibility of giving financial assistance to soldiers and their dependents, and in processing veterans' papers and giving personal service to soldiers and their families. Following discharge, the Red Cross continues its responsibility on a temporary basis. (b) After discharge, the service record goes to the Veterans' Administration which is responsible for the adjudication of personal claims, hospitalization, domiciliary care, and vocational training. The Local Rehabilitation and Training Division of the Federal Security Agency, through the State Department of Education, also carries on vocational training and placement, including medical care for the handicapped, who might thereby become self-supporting. (c) The problems attendant on reemployment are divided among several agencies. The U. S. Employment Service has major responsibility in placing veterans in their old jobs. The Veterans' Employment Service has a resident agent in each local office of the U. S. Employment Service for the purpose of getting jobs for all veterans except those who desire their old jobs back. Each local Selective Service Board has a Rehabilitation Employment Committeeman to see that the returned soldier gets his job back. Moreover, each local board is to have a clearing house committee to deal with disputed problems and to make use of local facilities. The Civil Service Commission aids in this entire job placement work by giving a priority to veterans.

Dr. George S. Stevenson, Medical Director of the National Committee for Mental Hygiene, and Dr. Winfred Overholser, Secretary of the American Psychiatric Association, act as psychiatric advisors to the Federal Vocational Rehabilitation Agency in Washington. Dr. Thomas A. C. Rennie, as Director of the National Committee's Division of Rehabilitation, cooperates closely. Dr. C. Charles Burlingame, Chairman of the American Psychiatric Association's Committee on Public Education, has been most zealous in the work.

Rehabilitation in Hawaii

In Hawaii organized efforts are under way to provide the necessary rehabilitation for veterans of World War II. In November, 1943, official inquiries were addressed by Dr. Burlingame and Dr. Rennie to the author in his capacity as Territorial Representative of Dr. Burlingame's committee. These communications requested information as to facilities and plans for rehabilitation and for public education on the subject. As a result a number of discussions were had with Mr. Eldon P. Morrell, Supervisor, Vocational Reha-

bilitation of the Physically Handicapped; Dr. C. W. Dodge, Manager, Veterans Administration; Col. P. M. Smoot, then Territorial Director, Selective Service System; Col. C. E. Fronk, former Territorial Medical Advisor for the same; Miss Helene Morgan, Director, Home Service Department, Hawaii Chapter American Red Cross; and Dr. William Shanahan, Acting Director, Bureau of Mental Hygiene. A summary of information and suggestions from them was forwarded to Drs. Burlingame and Rennie in December 1943.

During the following months several meetings of this group were held along with invited representatives of other interested agencies including the Honolulu Council of Social Agencies, the Hospital Division of the American Red Cross, the Hawaii Territorial Society for Mental Hygiene, the American Legion, the Federal Security Agency, the U. S. War Manpower Commission, etc. It was the feeling of the group that the Governor should be approached to appoint an official committee to coordinate the various rehabilitation activities.

On June 2, 1944, Governor Ingram M. Stainback called a meeting of some fifty-nine interested persons at Iolani Palace. Mr. Alfred Castle was appointed chairman of the group, and later of the Emergency Steering Committee. Other members of the committee are Dr. A. L. Dean, vice-chairman, Mr. Phil Cass, Mr. L. F. Deacon, Col. K. J. Fielder, USA, Capt. Lucius Johnson, USN, Mr. C. M. Wright, Mr. A. H. Eyles III, Mr. M. F. Calmes (Maui), Mr. Caleb Burns (Kauai), Mrs. Louise Root, acting secretary. One representative from Hawaii was still to be appointed at last reports.

This steering committee has now become the executive committee of "Veterans' Advisors"—the title applied to the coordinated information and service programs being developed.

A temporary executive secretary, Mr. William Rinehart, has been appointed to collect and evaluate data from all community agencies and help in handling problems of veterans and their families. Plans are being worked out for Territory-wide dissemination of information. An information center, to which veterans may go for information or referral to the proper governmental or community agencies, is to be opened in the Honolulu Armory on September 1.

Veterans' Advisors will have an advisory committee composed of representatives of War Manpower Commission, the Selective Service System, the American Red Cross, and the Veterans Administration. In addition, the Honolulu County Medical Society has appointed a committee, including a psychiatrist, on which Veterans' Advisors may call for assistance whenever they so desire. The Honolulu Bar Association, through Mr. Phil Cass and Mr. A. L. Castle, has been asked to appoint a legal committee to study laws relating to guardianship and adoption of chil-

dren of veterans. Numerous problems which still confront this new organization are being studied by them.

No more fitting conclusion to this paper could be found than a summary of Dr. Burlingame's excellent article, "Mental Health vs. Money in Rehabilitation,"¹¹ since it gives a point of view without which no program can be really successful.

"The implications of the problem of rehabilitation extend far beyond any economic course of action to the broader sphere of national mental health. It is a problem which cannot be solved adequately by the government alone, but falls within the purview of democratic responsibility. It must be shouldered by the people themselves, working in cooperation with the government. The need of some preliminary form of public education in this matter is therefore urgent. It must be remembered that although the nation's people are firmly united in their war objectives, in many other spheres uncertainty, cynicism and disagreement prevail, an aftermath of long post-war disillusionment, indifference and myopia. Our successful mobilization for war has been a matter of intensified orientation in the direction of war, and the same approach must be adopted for our return to the ways of peace. The same machinery which was set in operation to educate and indoctrinate all citizens to a war state of mind—press, radio, cinema, school, etc.—should all be employed. In formulating our program of rehabilitation we should focus attention on certain fundamental points. First is the development of the right attitudes toward the returning casualties. These men must never be made a class apart, the objects of ineffectual pity, or, in the case of neuropsychiatric discharges, of unintelligent condemnation for weakness. To sympathy and understanding, to due monetary compensation, must be added an affirmative point of view, affirmative psychological suggestion, a purpose to help these men back to normal channels of civilian life as quickly as possible, and especially a display of confidence in their ability to do so. These attitudes are a necessary preliminary to the important objective of preserving or restoring the man's will-to-do, always the first step on the road to mental health. The second is indoctrination and reeducation for peace objectives and rehabilitation. As soon as discharge from the service is imminent, reorientation and indoctrination for civil responsibility and community usefulness should begin. Rehabilitation should be set in motion immediately while the dischargee is still impressionable. It follows that the need for a uniform policy, the integration of the efforts of all government, public and other agencies now working on rehabilitation, and the elimination of red tape in dealing with problems of hospitalization and adjudication, is urgent. So, too, is the need for simplifying and streamlining the subsequent steps of job placement. Here it seems sensible to back the proposal that the agencies which took the man out of civilian

life should be responsible for putting him back into it promptly and efficiently. This means Selective Service in reverse: local groups representative of our national interests, representative of professional, business, industrial and laboring classes, who can cooperate with those in the field of mental hygiene. Finally, there must be interpolated in our approach to rehabilitation the vision of the future. We must see the war as an opportunity and an effort already begun to utilize fully the country's industrial and manpower for rebuilding peacetime pursuits and developing the highest abilities of our people. The individual himself remains the source of such a vision of the future."

Summary

1. There is presented a brief discussion of rehabilitation from the psychiatric viewpoint.
2. The nature and magnitude of the problem in veterans of World War II are outlined.
3. Rehabilitation plans and machinery—national and territorial—are described.
4. An indispensable point of view for the successful operation of any plan is discussed.

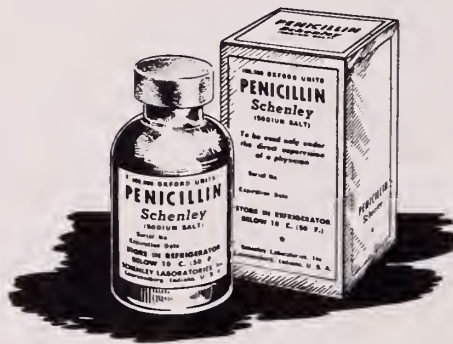
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RICHARD DEMONBRUN KEPNER, M.D.

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EMERGENCY MEDICAL SERVICES

PROGRESS REPORT, SEPTEMBER, 1944

Since the last report there has been steady and progressive retrenchment in all phases of operation of the Office of Civilian Defense. Sacred Hearts Hospital has been closed and the building restored to its original use as a school. Large quantities of hospital equipment have been transferred on a sort of "lend-lease" arrangement to other hospitals, pending a final settlement of property responsibility. The closing of Wahiawa Emergency Hospital has been recommended but not yet effected. The Wahiawa Community Associations are planning to set up and operate a hospital when this occurs, and they have been offered the loan of all the necessary equipment. This community certainly needs a hospital. Kailua-Lanikai district also needs medical facilities; however, the aid station there will have to be closed very soon, as well as the one at Pearl City. The City and County have been offered the use of these facilities if they desire to operate them. All of the other first aid stations have been closed.

Fifty-eight of the nurses from Sacred Hearts Hospital have already accepted nursing positions in the Territory. Miss Margery MacLachlan has gone to Queen's Hospital as Director of Nursing. Mrs. Leah DaCosta, who was chief nurse at Sacred Hearts Hospital, has gone to Queen's Hospital as first assistant Director of Nursing, and Miss Nora Meagher, who was her assistant at Sacred Hearts, will be second

assistant at Queen's. Miss Helen E. McDonnell has gone to Queen's Hospital as a head nurse and Miss Jessie Kohr has gone there as a ward teacher. Seven staff nurses have joined Queen's Hospital's nursing staff. Two nurses from Sacred Hearts are teaching at St. Francis Hospital, and two anesthetists have joined the staff at Kuakini Hospital, along with two staff nurses. Several other nurses have joined the staffs of other hospitals in the city, and some have taken positions on the outside islands.

The volunteer setup as outlined in the last report remains available for any emergency. The W.A.S.P. (Women's Ambulance Service Patrol) are still available for service as drivers and orderlies. They wish to remain affiliated with the Preparedness Committee of the Honolulu County Medical Society after the war, to be available for use in any emergency. They are all business women of above average intelligence and have been thoroughly trained by the Medical Corps of the Army.

In summary, the Emergency Medical and Ambulance Service of the Office of Civilian Defense is entirely on an inactive and volunteer status, except for the few remaining paid personnel at headquarters in charge of property and records. The Chairman of your Preparedness Committee is still on volunteer, part-time status.

H. L. ARNOLD, M.D.
Director





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CIVILIAN HOSPITAL NEEDS

SURVEY OF HONOLULU HOSPITALS

(Concluded)

Functions of the Hospital

These are generally accepted as being:

1. Care and treatment of patients.
2. Education of doctors, residents, interns, nurses, dietitians, technicians and others.
3. Centers for dissemination of public-health information; education of the public in prevention of disease and promotion of health; also periodic physical examinations and other activities for improving the health of the community.
4. Advancement of research.

Care and Treatment of Patients: Standards of professional ability in the Territory are well above those of the United States as a whole, and some of the reasons for this have already been mentioned. Care of patients is on a generally satisfactory level, but suffers because of the unavoidable overcrowding. The idea of going to hospitals when sick appears to be quite acceptable to the people of Honolulu, and this is beneficial, because doctors can give much better service when the diagnostic and therapeutic facilities of the hospital are available.

No one who is associated with hospitals should rest in complacency until all those in this area are made to conform to the minimum standards, and accredited by the American College of Surgeons. That first degree of recognition is usually found to be a great stimulus, urging the staff and directors to strive for even higher standards in efficient care of the patients.

Education: This suffers to a considerable degree because Honolulu is not a center for medical teaching. It is frequently said that the hospital which is most active in teaching is most valuable to the community and most deserving of public aid. One of the greatest stimulants to careful study and treatment is the staff meeting, at which all deaths, infections and failures are frankly discussed. An important measure of the degree of scientific interest of the physician is the percentage of post-mortem examinations of patients dying in the hospital. A definite campaign to inform the public of the value and importance of post-mortem examinations has been successful in other communities and might well be started here. Staff meetings in several of the hospitals are far from being what they should be.

It is noted that Queen's Hospital is advertising in the medical and hospital journals for a medical director. One of the principal qualifications for such a position should be interest and experience in organizing and conducting the educational program for residents and interns. Here is one of the points where this hospital is most deficient.

In all the local hospitals, nursing education is particularly weak in pediatrics. Children's Hospital provides the patients, and nurses from other hospitals are sent there for varying periods. Everybody is in accord that there is a deficiency in the pediatric-nursing instruction, and it seems to be agreed that this lack of competent teachers is due to the fact that those responsible cannot decide which hospital should pay the salaries of the instructors. This is most regrettable, since it penalizes the whole community. Undoubtedly, there are disinterested sources from which such funds could be obtained, if the hospital people are unable to reach an agreement. Perhaps this would be a suitable activity for the Public Health Committee of the Chamber of Commerce.

It would be a great advantage if arrangements could be made among the various hospitals, so that the pupil nurses of all could receive adequate instruction and practical work in pediatrics, obstetrics, mental diseases and other nursing specialties in hospitals which have large numbers of such cases.

If the hospitals were willing to combine their facilities, it would be possible to organize excellent courses for training technicians in X-ray, Laboratory and other special branches. This would avoid the necessity of travel to the mainland for such instruction, insure an adequate supply of technicians, and raise the average level of their ability.

Valuable exchange relations formerly existed between local hospitals and institutions on the mainland. Kapiolani Hospital had an exchange resident from the University of Michigan. Nurses from St. Francis Hospital went to St. Louis for training in pediatric nursing. At the time of the blitz, the Children's Hospital was negotiating an agreement with the University of Cincinnati for exchange of residents. The war put an end to all of these, but their value was so evident that all the authorities agree that such arrangements should be renewed and extended as soon as it becomes possible.

To an outsider, it appears remarkable that the local hospitals do not have out-patient departments. The reason for this becomes clear after studying the

history and development of Palama Settlement, which now provides such service for the community. That work has been done in a most admirable manner for nearly 40 years, and there is no intent to criticise or belittle it when the opinion is expressed that this work is a proper obligation of the hospitals.

In a well-developed hospital the out-patient department is an integral part, with important functions. It brings the patient into contact with the doctor at an early stage of his illness, when the greatest good can be done him. It makes the whole laboratory and clinical facilities of the hospital available for early diagnosis. It acts as a screen and helps to prevent overcrowding of hospital beds, by keeping many of the chronically ill on their feet. When it becomes necessary for a patient from the out-patient department to be admitted to the hospital, much time and effort are saved by the preliminary studies which have already been done. Treatment can be continued in the hospital along the same lines and by the same doctor who has gained knowledge of the patient's condition in the out-patient clinic.

Most important of all is the educational value of the out-patient clinic to doctors, interns, residents, nurses and technicians who are being trained in the hospital. Some of these are now detailed to work in the Palama Settlement, but the instruction is not well organized and most of the educational value is lost.

At this time, the out-patient work at Palama is reduced to a small fraction of its previous volume, because most of those who previously patronized it are now profitably engaged in work connected with the war. It would seem to be an appropriate moment for the authorities of Queen's, St. Francis, Children's and Kuakini Hospitals to get together and organize out-patient clinics which will meet the needs of the community, and also yield them the advantages of close contact with this service. Community funds which now support the work at Palama should be made available for the new clinics, because high-grade dispensary work is a costly affair. It is to be hoped that sentimental regard for the praiseworthy record of Palama Settlement will not be allowed to prevent this development.

Sir James Mackenzie, the distinguished medical educator, advocated placing the best professional talent of the hospital in the out-patient clinic, where the most could be done for the patient. By doing this, he believed, many patients could be restored to health who might otherwise be compelled to take to beds in the hospital.

Public Health Work: The increased population of this area, and the changes in its composition that are taking place, make the dissemination of public health information more than ever important. The most nearly perfect channel for this is in the contact of the hospital with the public in the out-patient clinic. Here, good will and understanding can be most ad-

vantageously cultivated. Periodic health examinations and studies of workers in hazardous occupations offer valuable opportunities for work which is of benefit to both the hospital and the community.

The Public Health Committee of the Chamber of Commerce is engaged in the commendable work of providing funds and means of advertising many activities which help to protect the public from disease. Large sums have been spent in aiding the preventive work against plague, typhus and dengue. They are in the fortunate position of being able to determine what projects are most beneficial and to accomplish them, almost without political pressure. Their relation with the local medical society is a most happy one, and profitable to the public. The suggestion is made that some of the educational and other recommendations made in this report would be worthy projects, offering great benefit to the public. It would be difficult to find more valuable investments for the public health fund.

Advancement of Research: Extension of the present war into tropical areas offers a project in which the hospitals and the University of Hawaii could co-operate, with great benefit to the public throughout the whole Pacific area. Study and research in tropical diseases have been greatly stimulated by the fact that, in many places, they are more of a menace to our forces than is the enemy. Some of the best minds in the whole field of medicine are now concentrating on efforts to make the Tropics safe for the alien. Many of these problems have already touched this Territory, and research in them has long ago been undertaken. There exists here a nucleus for development of valuable sources of information, which may be of benefit to all the tropical world; it should be expanded into a postgraduate school of tropical medicine, of the highest type, a part of the University of Hawaii.

This school could integrate activities such as the leper hospitals and clinics at Kalihi and Kalaupapa, the plague-control laboratories on Hawaii, the laboratories maintained by the Hawaiian Sugar Planters Association, and the various departments of the local governmental health activities. Dengue and typhus research and control work is highly organized here, while filariasis and various protozoan diseases are always available for teaching purposes.

The principal schools of tropical medicine are now located at New York, Liverpool and London, thousands of miles from the areas where the diseases prevail. Tropical hygiene, sanitation and treatment can best be taught where the work is actually being done, and Hawaii offers ideal conditions for this. It would draw students and teachers from all the lands bordering on the Pacific Ocean.

This opportunity is the sort that would appeal to the large beneficent organizations which supply funds for developing and maintaining activities devoted to

the public good. It has just been announced that the Josiah H. Macy, Jr. Foundation has given \$150,000 for a school of tropical medicine at Columbia University. The idea should be developed and presented to groups capable of assisting in such work.

Estimate of Local Voluntary Hospitals

Children's Hospital: The concrete main building was constructed in 1909, and was considered fireproof at that time. Obsolescence of hospital buildings of the substantial type is usually computed at $2\frac{1}{2}$ per cent a year, which places this structure near the end of its useful life for hospital purposes. In late years, upkeep has been neglected, and standards of house-keeping have been very low. Repairs have been postponed because a new building was about to be constructed. Equipment is meager, and much of it is antiquated. Records are far below the minimum standards. Laboratory and surgery are inadequate.

Plans for the new building are said to provide for about 100 beds, with ample clinical facilities of all sorts. War conditions have prevented its construction, though there apparently is money available for it. There is great need for a modern hospital of this special type, and there is little doubt that the community would contribute generously for it if an appeal were made.

A study of local requirements indicates that the new building should be expanded to provide 120 beds, with complete modern clinical facilities. It should put this institution in its rightful place as the principal center for study and treatment of diseases of children in this area.

To gain this place, and to be prepared for the responsibilities that it entails, certain changes in the administration appear to be desirable. When the present emergency ends there will be numbers of well-trained hospital administrators, dislocated by the war and looking for places to start new careers. Careful search should be made for the right person to fill this important position. Economy should not be a consideration in this selection, for a high-grade administrator at a high salary would be an excellent investment, paying high dividends in service to the community. Extensive investment in equipment will also be necessary.

An opportunity for valuable benevolence lies in the establishment of an out-patient service. This would be of great benefit to both the hospital and the public. It would also aid in the desirable aim of gaining approval of this hospital for training residents.

Kapiolani Maternity Hospital: A new administrator has recently taken charge, a man of wide reputation for breadth of vision and intelligent handling of hospital problems. He can be depended upon to guide the development of the hospital along the course that will best fit it to serve the needs of the community.

The present building has a normal capacity of 50 beds. It was constructed in 1929 and apparently was well maintained until war condition interfered. The equipment is inadequate in many ways. An important defect is lack of steam for bed-pan sterilizers. Money has already been made available for a new wing which will provide 50 additional beds, and construction is to start as soon as labor and materials become available.

This hospital should be developed as the city's principal unit for study and care of obstetrical conditions. Others should have maternity wards and clinics, but only as departments of general hospitals. Kapiolani used to maintain beds for gynecology, but this does not appear to be necessary, for that specialty is rapidly being absorbed into general surgery. The number of beds recommended for general medicine and surgery is intended to provide enough for gynecology. Plans for Kapiolani's new building should furnish rooms and equipment for maternal and infant surgery.

Other facilities urgently needed are an adequate power plant and laundry. It would be a great advantage if arrangements were made so that pupil nurses from other hospitals could obtain here a well-organized course in obstetrical nursing. Staff organization also appears to offer room for improvement. When more normal times arrive, efforts should be made to have this hospital approved for training interns and residents.

The prenatal clinic, maintained by the Board of Health, is of great value. It deserves encouragement, with larger quarters and improved equipment.

Kuakini (Japanese) Hospital: This institution has in the past been run by and for Japanese, with no desire to allow persons of other races in the wards or on the staff. Those in authority now appear to realize that the days when such an arrangement was needed, or would be tolerated, have gone. Admission of Japanese workers to the Territory ended in 1924, and most of the remaining ones who were born in Japan are now 50 or more years old. Their children and grandchildren, in spite of the efforts of the elders to tie them to Japan, show evidence of considerable Americanization.

A local-born Japanese stated the case in this way. The children of the Japanese attend the same schools with children of other races. They play with and against them in competitive games, with no thought of race difference. They go to the same movies, wear the same clothes, chew the same gum, and want to do the same things that other American children do. Most of the doctors of Japanese ancestry now remaining in the Territory are graduates of Class-A medical schools in the United States. The feeling prevails that they would welcome the opportunity to practice in a high-grade hospital, equipped and administered according to American standards.

The present appears to be the perfect time for broadening and modernizing Kuakini Hospital. It should be developed into a general hospital, serving the whole community without regard to race. A precedent for this can be found in the German Hospitals which flourished in several large cities of the United States before the first world war. When international relations reached such a stage that their German affiliations were a handicap, they changed their names, altered their policies and revamped their staffs and boards of directors, thus being transformed into high-grade general hospitals for the use of all. This same policy should be followed with regard to Kuakini Hospital. It will require tolerance, sympathetic aid and benevolent assistance from the community. I believe that those in charge of the hospital's affairs will be found amenable to such efforts.

Immediately after the blitz, the Army moved in and took charge of the hospital. It still occupies a considerable part, and exercises a large degree of control over its policies and activities. There are indications that suggest an early termination of this military supervision, but it should be continued until arrangements for the future control and policies are completed in every detail. Persons of other races will not want to go to Kuakini as patients if the administration remains in the hands of the Japanese. A change in this respect will be necessary, but a generous representation of Japanese should remain on the governing board. The Kuakini Home for aged Japanese is adjacent to the hospital, and should continue to receive generous support.

The main hospital building was constructed in 1917, and so requires replacement or extensive rehabilitation. In addition to the present 124 beds for general medicine and surgery, 100 more should be provided as soon as possible. The 12 obstetrical beds should be increased to 27. Twelve more beds for children should be added. The contagious-disease ward should be restored to its intended use. The present use of this hospital as the place for treating prostitutes and others with venereal diseases may well be continued. The culinary, surgical, and other facilities will need extensive improvement. An out-patient department should be developed.

The nursing instruction has not been adequate, and the school is not an approved one. Many of the pupil nurses are handicapped by a lack of knowledge of the English language. The suggestion has been made by several persons that this hospital should not attempt to produce graduate nurses, but should specialize in training practical nurses and children's nurses, for which there is great need. This arrangement is found desirable in other cities, and is worthy of trial here.

Every effort should be made to aid and encourage

the development of Kuakini as the city's low-cost general hospital. A competent, broad-minded administrator will be required to guide the progress of the hospital, and efforts should be made to gain, eventually, the approval of the American College of Surgeons, and authority for training interns and residents. The permanent committee on hospitals, which is recommended in another place, might well act as liaison between this hospital and the public, arranging policies, controlling development and supervising finances. Under such guidance, this hospital could become an asset of great value to the community.

Queen's Hospital: This has been, since the earliest days, the leading hospital of the Territory. It is registered with the American Medical Association and approved by the American College of Surgeons; it is also approved for residencies in several of the specialties. Teaching facilities are the best in the community. Its administration and financial management are on a very high level. The responsibilities that go with such an eminent position have been well met, and its generous support by the community has been richly deserved.

Construction has already been started on a new wing which will provide about 100 additional general beds, also delivery rooms for obstetrical patients. Another floor can be added when it becomes necessary. Application has been made for funds to construct a 50-bed mental-hygiene clinic, to replace the present one, which is outgrown, and which is not fireproof. This is an important project, and every effort should be made to complete it as soon as possible.

It is recommended that an additional building, with 125 general beds, be erected in the near future. This will bring the total beds in Queen's Hospital to the neighborhood of 500, which is about as large as any hospital in a community of this size should be allowed to grow. Above that, the advantages of unit control and concentration begin to disappear, and the institution tends to become unwieldy.

The location of the City and County Emergency Hospital in the grounds of the Queen's Hospital is advantageous to all. This might well form the nucleus of the out-patient department, which should be developed as rapidly as possible.

Residents and interns are the very backbone of the service in general hospitals of this type. They are compensated for the work they do by the training and instruction that they get. A well-organized system of instruction is an essential, if the hospital is to get the best of service. This has been a shortcoming at Queen's, and strong efforts should be made to correct it, as soon as conditions begin to return to normal. It is to be hoped that the new medical director will be a man who is interested and experienced in such educational work.

The courses for nurses are generally good, but there is a deficiency in teaching of pediatric nursing. An agreement for the correction of this should be promptly made. This hospital offers excellent facilities for instruction of technicians. It would be a valuable thing for both the hospital and the community if courses were developed and approval secured for training technicians in the various specialties.

The proportion of private rooms, and the arrangements of wards, are suitable for this as the city's high-

are completed, approval of training for interns should be sought.

Answers to the Five Questions

1. *What numbers and types of beds are now in service in the hospitals in the city of Honolulu?*

These beds are all in permanent buildings, of fire-proof or fire-resistant type, unless otherwise indicated. Additional beds, secured by overcrowding or placing beds in attics, basements or corridors, are omitted.

Numbers and types of beds now available.

HOSPITAL	GEN'L MED. & SURG.	OBSTET- RICS	CONTA- GIOUS	CHIL- DRN	TUBER- CULOUS	MENTAL	FFEBLE- MINDED	CHRON. INDIGENT
Children's .....	.....	.....	.....	75*	.....	.....	.....	.....
Kapiolani .....	.....	50	.....	.....	.....	.....	.....	.....
Kuakini	124	12	40	18	.....	.....	.....	.....
St. Francis	69	31*	.....	.....	.....	.....	.....	.....
Queen's	226	42	30*	.....	.....	25*	.....	.....
Leahi .....	.....	.....	.....	.....	480	.....	.....	.....
Waimano .....	.....	.....	.....	.....	.....	.....	400	.....
Territorial, Kaneohe .....	.....	.....	.....	.....	.....	926	.....	.....
Maluhia .....	.....	.....	.....	.....	.....	.....	.....	140
Total	419	135	70	93	480	951	400	140

* Temporary or substandard structure

priced hospital. The community has a definite need for this, just as it has for the medium-priced and low-priced hospital. The difference in prices does not mean a corresponding difference in professional service. In fact, this often works in reverse.

St. Francis Hospital: This is a younger institution, but developing along very practical lines to become an excellent general hospital. The main building, erected in 1927, has enjoyed good upkeep and is in satisfactory condition. Funds are available for construction of an additional wing, which will provide 66 general beds and 33 for obstetrics. The latter are to replace the present 31 which are in a temporary building. The plans also provide for culinary and other facilities which now are far outgrown.

It is recommended that this wing be completed as quickly as possible, and that another with 200 additional beds be constructed. There is urgent need for this increase, and it should be provided as soon as possible. Planning and equipment should be based on the intention that this is to continue as the city's medium-priced hospital, with rooms and wards less costly than Queen's, but on a somewhat higher scale than those at Kuakini.

This hospital should develop an out-patient department. The records, the laboratories and other special departments should be improved so that unqualified approval by the American College of Surgeons may be obtained. When the additions and improvements

The figures represent the normal bed capacity of the buildings.

2. *What numbers and types of beds should be in service to care adequately for the population?*

General medical and surgical.....	1,000
Obstetrical	200
Mental	1,400
Mental observation and treatment.....	50
Feeble-minded and epileptic.....	800
Tuberculosis	1,000
Children	150
Acute contagious	70
Chronic-indigent	300
Convalescent-nursing	520

These figures are based on the assumption that this area will have a permanent population of about 260,000, one year after the end of the war, when a considerable degree of stabilization will have occurred.

3. *What numbers and types of beds should be in service to care for our civilian population 5 & 10 years from now?*

Prolonged gazing into the crystal ball has revealed nothing of value in reply to this query. The number of unknown factors is so great that any estimate would be nothing more than a guess, and would be of no value.

My recommendation is that this be one of the problems submitted to a small, permanent committee of local persons, carefully chosen to represent the community in making decisions on the hospital situation. This idea is more fully discussed under recommendations.

4. *In what hospitals should the added facilities be installed, and which types should be provided in the different locations?*

wise the hospital program. The committee should be permanent in nature, so that it can plan hospital development from year to year. It should have broad

Numbers and types of additional beds needed.

HOSPITAL	GEN'L MED. & SURG.	OBSTET- RICS	CONTA- GIOUS	CHIL- DRN	TUBER- CULOUS	MENTAL	PHYSI- CAL	CHRON. INDIGENT
Children's .....	.....	.....	.....	40	.....	.....	.....	.....
Queen's	125	.....	.....	.....	.....	25	.....	.....
St. Francis	200	33	.....	.....	.....	.....	.....	.....
Leahi .....	.....	.....	.....	.....	500	.....	.....	.....
Waimano .....	.....	.....	.....	.....	.....	400	.....	.....
Territorial, Kaneohe .....	.....	.....	.....	.....	.....	.....	400	.....
Maluhia .....	.....	.....	.....	.....	.....	.....	.....	160
Kuakini	100	15	.....	12	.....	.....	.....	.....

These beds are in addition to those included in approved projects, for which money has already been granted. Such projects will provide 166 general beds, 66 at St. Francis and 100 at Queen's; 83 obstetrical beds, 33 at St. Francis and 50 at Kapiolani.

5. *What new sites are desired, if existing sites are not deemed adequate?*

No new sites within the city are recommended. If a new institution to carry on the work of Maluhia Home is to be built, it should be well outside of the city. It might well be combined with a convalescent-nursing home.

Additional Suggestions

Many of these are not strictly within the scope of the questions that were to be answered, but they are so intimately associated with the hospital program that their inclusion seems justified.

Priority: Even with the most successful planning, not all of the hospital buildings can be constructed at once. It will be necessary to decide which ones shall be first on the list, and which shall have to wait a later turn. As there will be a considerable delay before any building can be started, the picture may change greatly before that time. It hardly appears to be worth while to list the needs in order of urgency at this time, because of the certainty of change.

Decisions on this should be made by the permanent hospital committee, which is recommended below, based on the needs of the community at the time building becomes possible.

Hospital Committee: The huge expenditure and the many large projects here recommended will need to be very carefully controlled. Otherwise, the program may get out of balance through mismanagement, and never reach completion. Some governing body is needed which will control and correlate each step, and keep it in balance.

For this purpose I suggest that a hospital committee of not more than 5 persons be selected to decide priorities, control expenditures, and generally super-

powers, so that it can make decisions on hospital policies in relation to the community interests. It should be composed of persons known to the community to be intelligent and trustworthy, broad-minded individuals who can make their decisions without being influenced by their affiliations with any institution, church or business. By this sort of control, waste, extravagance and overgrowth can best be prevented.

Various elements of the community, such as law, business, churches, the medical profession, women's organizations and charitable activities should receive consideration when the members of the committee are to be selected. No new hospital, or addition to an existing one, should be permitted without the approval of this group. The Hospital Council should have a close relation to the committee, in an advisory capacity.

The Honolulu Hospital Council: This organization offers possibilities for greatly increased usefulness to the hospitals and to the community. In other large cities the hospital council meetings are attended by the clergy, business men, representatives of women's organizations, associated charities, the press and others. The hospitals are represented by administrators, accountants, medical directors, nurse supervisors, and representatives of lay employees. Everything touching on the hospital field is frankly discussed in its relation to the usefulness of the institutions. The contacts are valuable and, as a result of the discussion, unified action can be taken. The presence of the press makes it possible to keep the public interested and informed of the actions taken and the reasons for them. Such an enlarged Hospital Council offers many advantages for the hospitals of Honolulu.

Cost: A survey such as this would be wasted labor if it recommended a program of hospital construction that the community was unable or unwilling to carry through. With this in mind, estimates have been held to the minimum, but still, the total cost will be enormous.

Increased cost of hospital construction is due to many factors, such as greater compensation for labor, improvements in equipment and many new devices.

increased use of hospitals as teaching centers, also the demand of an educated public for complete modern facilities. In 1928 the average cost per bed for building general hospitals was about \$3,600. By 1943, it had risen above \$6,000 for general beds, \$5,000 per bed for tuberculosis hospitals, and about \$4,000 for mental institutions. What the cost will be, by the time Honolulu's building program gets under way, is beyond my powers to estimate. The hospital magazines tell of many new and desirable construction materials and methods, some of which will cost more and some less than those formerly used.

Some of the cost will be paid by the City and County of Honolulu, some by the Territory of Hawaii, and some by voluntary contribution, but it will all come out of the pockets of the relatively small population of the Territory, except what the United States Government provides.

It has repeatedly been said that charitable donations are rapidly dwindling, because of high taxes and difficult business conditions, and will continue to do so. But the facts are quite different. Figures recently published show that, except for the years 1931 and 1933, gifts and bequests to voluntary hospitals were higher every year of the depressed decade, 1930-1940, than the average of the prosperous decade, 1920-1930. Income-tax experts are prepared to show persons with large incomes how they can actually save money by generous gifts to charitable institutions, such as hospitals.

Government money is available for hospital construction, when the relation of the need to the war effort can be clearly shown, as it manifestly is in Hawaii. Large sums have already been allotted for approved projects in Honolulu. It is to be hoped that other applications, especially those for mental patients, and for the Children's Hospital, will receive favorable consideration.

Money from the government is not always an unmixed blessing, for there is considerable reason to anticipate that increased contributions from that source may be the forerunner of increased government control. For some years there has been increasing pressure for standardization of accounting and administrative methods for all government hospitals, and the opinion has been freely expressed that this will be extended to all hospitals which receive any degree of support from this source. Many hospital administrators look with dread on this movement, which may eventually rob the voluntary hospitals of their strongly individualistic character, which now makes American hospitals the best in the world.

Plantation Hospitals: These have been an exceedingly valuable asset for the Territory, providing hospitalization for the general population when necessary, also doing admirable work in many problems relating to the public health.

Many of these have been visited, on the four large islands, but not one of them gave the impression of being a well-rounded institution. For example, one of the plantation doctors is interested in surgery and that department is best developed. In another, the chief interest is in tuberculosis, and other departments suffer. Another doctor expands his laboratory and pays less attention to other features. This is inevitable in such small organizations, and implies no criticism of the professional ability of the medical personnel. There is no doctor to whom all aspects of medicine are equally attractive, and so we compensate for this by employing larger groups in clinics and hospitals.

Is it not possible that the astute business men who manage the plantations with such success have missed a trick here? Would it not be better, on each of the larger islands, to have one central hospital to serve all plantations, with dispensaries for emergency work at the individual plantations? This would make possible an excellent staff of specialists and most modern equipment of every kind at the central hospital.

Hospital Visiting: An important factor in maintaining hospital standards is the interest of the public, as shown by their visits to the hospital. The American Hospital Association recognizes this fact, and has established the annual Hospital Day throughout the United States. On this day, the hospitals hold open house and welcome the public as visitors. Hospital Day comes on May 12. Because of the crowded conditions that now exist, it is considered inadvisable to allow general visiting in the hospitals this year. As soon as normal conditions are restored, it is hoped that press, pulpit and radio will publicize Hospital Day, so that the people may visit their hospitals, inspect them with a critical eye, and encourage them to maintain the highest standards of service.

Summary of Recommendations

Children's Hospital:

- New building, 120 beds.
- Laboratory, surgery and contagious unit.
- Develop out-patient department.

Kapiolani Maternity Hospital:

- New building, 50 beds.
- Power plant, laundry and other facilities.

Kuakini Japanese Hospital:

- Develop as low-cost general hospital, without racial affiliations.
- New building, 100 general beds.
- 15 additional obstetrical beds.
- 12 additional beds for children.
- New culinary, surgical and other facilities.
- Develop out-patient department.

Queen's Hospital:

- Wing now under construction, 100 beds.

New building, 125 general beds.
New mental-hygiene unit, 50 beds.
Develop out-patient department.

St. Francis Hospital:

New building with 66 beds and other facilities.
New building, 200 general beds.
Develop out-patient department.

Territorial Hospital:

New building, 400 beds.

Leahi Home:

New buildings, 500 beds.

Waimano Home:

Convert O.C.D. buildings for additional beds.

Maluhia Home:

New institution, 300 beds to start.

Convalescent-nursing home:

About 500 beds needed.
Consider combining with new Maluhia Home.

General recommendations:

All general hospitals qualify for approval by American College of Surgeons.

Improve instruction at Queen's Hospital for interns and residents.

Improve nursing instruction, especially in pediatrics.

Chamber of Commerce public health fund utilized for educational projects connected with hospitals.

Small permanent committee to supervise all hospital construction and development.

Expand Honolulu Hospital Council.

Develop school for training technicians.

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COUNTY SOCIETY REPORTS

KAUAI COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Kauai County Medical Society was held at 7:00 P.M., on May 10, 1944, at the Wilcox Hospital.

Present were Drs. Mack, Betsui, Harris, Boyden, Wallis, Liu, Hata, Chisholm, Brennecke, Umaki and Chang.

The minutes of the two previous meetings were read and approved.

Dr. Wallis, fresh from a conference with officials of the Hawaii Medical Service Association, stated that Kauai will not be ready to adopt the H.M.S.A. plan until the organization so modifies its constitution that Kauai, as well as other outside islands, may adopt the plan and yet retain a certain amount of autonomous control over certain details of operation of the plan.

The committee on the peace-time blood bank announced it would be unable to make any definite statement on the future status of the blood bank until a letter had been received from Dr. Ecklund stating his future intentions in regard to laboratory service on Kauai. Several members of the Society expressed the opinion that a blood bank was not feasible on Kauai and that the local physicians should make every effort to build up a large list of readily available donors. It was also suggested that supplies of dry plasma be kept on hand. During the discussion on this matter the question arose as to how long the present stores of wet plasma should be preserved without risking their loss by outdating. It was moved by Dr. Wallis that the matter of the present or current use of wet plasma, cost per unit, etc., be referred to the committee on the peace-time blood bank for a future report. Passed.

In the absence of the Delegate, Dr. Kuhns, Drs. Boyden and Wallis gave verbal reports on some of the highlights of the recent annual meeting of the Hawaii Territorial Medical Association.

Dr. Wallis reported on further developments in regard to the Emergency Maternal and Infant Care program. He stated that he had heard the differences between the physicians and the promoters of the plan thoroughly discussed at the annual meeting of the Hawaii Territorial Medical Association, and he was convinced that most of the differences were based on misunderstandings. It was generally agreed, however, that the proposed statement of policy of the Council

of the Hawaii Territorial Medical Association was a justifiable one. It was moved by Dr. Boyden that the Society rescind its previous motion to delete Article 5 of the proposed statement of policy referred to above. Passed.

The Society unanimously approved a motion by Dr. Wallis that congratulations be extended to Dr. Eric Fennel on his recent election to the office of President of the Hawaii Territorial Medical Association. Incorporated in the motion was an invitation to Dr. Fennel to meet with the Society at an early date. Incorporated also in the motion was an invitation to Mrs. Bolles, Executive Secretary of the Hawaii Territorial Medical Association, to visit Kauai and contact each member of the Society individually and informally, her travelling expenses to be paid by the Society.

The Secretary read a letter from Dr. Wm. Shanahan, Acting Director, Bureau of Mental Hygiene, in which he stated his intention of visiting Kauai in the near future. It was the unanimous wish of the members present that Dr. Shanahan be invited to meet with the Society on the first day of his arrival on Kauai. This special meeting was tentatively set for May 24.

Dr. Wallis announced that Dr. Stewart of Shriners' Hospital would be on Kauai in June during the time of the regular monthly meeting of the Wilcox Hospital Staff. The President of the Society asked the Secretary, who is also secretary of the Wilcox Hospital Staff, if he would write to Dr. Stewart and invite him to address the Staff on his latest views on the treatment of infantile paralysis. The Secretary stated he would extend such an invitation.

Dr. Chisholm informed the Society that the photo-roentgen unit of the Board of Health is to be sent to Kauai in August, or thereabouts, for the roentgen examination of all food-handlers. The Kauai Tuberculosis Association has agreed to meet the cost of the films and of certain personnel used in this survey. While the photo-roentgen unit is here on Kauai it will be available to any interested organizations desiring to have their employees x-rayed.

Dr. Chisholm raised the point that the meetings of the Society had developed into business meetings almost to the exclusion of scientific discussions or papers. He asked for suggestions as to how the Society might become more active along scientific lines. Dr. Hata suggested that we might well combine business and scientific endeavor in our regular meetings,

and he made a motion that major business before the Society be referred to appropriate committees who will be expected to present their reports in writing so that quick action may be taken by the Society, thus making time for scientific presentations. Also incorporated in the motion was the intention that committees be prompt in their reports, presenting the same at the next meeting if possible. The motion was seconded by Dr. Liu and passed.

Dr. Chisholm, as President of the Society, appointed the following committees, some of which are reappointments:

Medical Advisory Committee to Department of Public Welfare: Brennecke, Chairman; Boyden, Hata. Ex-officio members: Chisholm and Liu, as President and Secretary.

Public Health Committee: Chisholm, Chairman; Kuhns, Umaki.

Library Committee: Brennecke, Chairman; Mack, Umaki.

Program Committee: Mack, Betsui.

Peace-Time Blood Bank and Laboratory Committee: Liu, Chairman; Boyden, Brennecke.

Committee on H.M.S.A. Plan: Wallis, Chairman; Mack, Brennecke, Umaki.

Fee Schedule Committee: Wallis, Chairman; Kuhns, Hata.

Public Policy and Legislation Committee: Boyden, Chairman; Chang, Kuhns. Ex-officio members: Chisholm, Liu, as President and Secretary.

There being no more business, the meeting adjourned at 10:11 P.M.

A special meeting of the Kauai County Medical Society was held on May 24, 1944 at 7:30 P.M. in the library of Wilcox Memorial Hospital, to have Dr. Shanahan discuss the plans of the Bureau of Mental Hygiene.

Members present were: Doctors Chisholm, Wallis, Umaki, Liu, Chang, Boyden, Kuhns, Mack, Harris and Betsui.

The President called the meeting to order by having the Secretary read a portion of the minutes dated October 13, 1943 relative to the impressions the Society had toward the services rendered by the Mental Hygiene Bureau.

Dr. Shanahan then outlined the future plans of the Bureau. He stated that the Bureau of Mental Hygiene plans to send a psychiatrist to each island for at least one week every three months; that a psychiatric social worker will probably be secured with the salary boosted to \$207.00 per month from a former salary of \$135.00; that negotiation for a child psychiatrist is being planned and funds are now available; that a full time assistant psychiatrist is on his way to Honolulu and will be on the island within three months as scheduled.

Members present felt a need for a mental ward where patients could be kept either for treatment or confinement prior to being transferred to Honolulu. Dr. Wallis moved that a committee be selected by the President to determine the feasibility and location of such a ward on this island and to negotiate with the County for funds to support this project. It was seconded by Dr. Betsui and passed.

Dr. Chisholm then read the regulations issued by the O.M.G. regarding the registration of photographers, X-ray technicians, and all who have access to the developing room.

There being no further business, the meeting adjourned at 9:30 P.M.

DAVID LIU, M.D., *Secretary*

MAUI COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Maui County Medical Society was called to order on June 20, 1944 by Dr. Patterson.

Members present: Drs. Patterson, Lightner, McArthur, Kanda, Osmers, von Asch, Shimokawa and K. Izumi.

Guests: Drs. Gaspari, Morris, Nedwicky, Stewart, Stitt and Schram.

Dr. Patterson gave a brief report on the Territorial Medical meeting. He stated that the E.M.I.C. plan was discussed and the Territorial Committee's report was passed. He also brought up the problem of fees charged for taking Board of Health chest films. Dr. Lightner moved that we accept the fee which the Board of Health offered, namely, \$2.00. It was pointed out that in the past we have been willing to do this work without regard for our overhead, in furtherance of the T.B. program.

Dr. Schram gave a short report on penicillin, which the Board of Health is making available for treatment of gonorrhea.

Dr. Patterson reported that Queen's Hospital has been selected to control distribution of penicillin for the civilian population in Hawaii. Dr. McArthur moved that the President appoint a committee to control the distribution of the drug locally and that Dr. Schram be an ex-officio member. Dr. Patterson appointed Dr. Osmers, Chairman, and Dr. McArthur, Dr. von Asch and Dr. Schram, ex-officio. Malulani Hospital was selected as a distributing center.

Dr. Balfour (and Mrs. Balfour) have been placed in charge of the Medical Society Library and are responsible for indexing work.

Dr. Schram reported that Dr. Tompkins was selected to read the Board of Health food handlers' x-rays. Dr. McArthur moved that all T.B.C. program work be centered with the Kula Sanatorium doctors—namely, Dr. Tompkins and Dr. Izumi—or persons delegated by them. Seconded and passed.

Dr. Pauline Stitt spoke about "Pregnant Women in Industry."

Dr. Gaspari, Lt. Cmdr., U.S.N., spoke on "Thyroid Disease."

GEORGE VON ASCH, M.D., *Secretary*

The regular monthly medical meeting of the Maui County Medical Society was held at the Jodo Hall on Central Avenue, Wailuku, at 7:30 P.M. on July 10, 1944.

President Patterson presided.

Members present: Drs. K. Izumi, H. Izumi, Kanda, Patterson, Shimokawa, Balfour, Osmers and Sanders.

Guests: Dr. Liljestrand of Aiea, and Drs. Morris and Nedwicky, U.S.N.

A letter from Dr. Fennel, President of the Territorial Medical Society, was read. It was agreed that we would wait until Spring to invite Dr. Fennel to visit Maui and at that time would devote one meeting to any business he cared to discuss and to a scientific program by him.

The new Industrial Fee Schedule was discussed and it was agreed to accept that of the Honolulu County Society. It was thought that it would be better for the Territorial Medical Society to have an industrial fee schedule for general use in the Territory rather than for every one to use that of the Honolulu Society.

A letter from Dr. Wishik regarding working pregnant women was read.

A letter was read from Dr. Shanahan asking if doctors had had difficulty securing travel priorities for psychiatry patients to go to Honolulu. None of the doctors present had had any difficulty securing such priority.

The establishment of a child guidance clinic in Honolulu was discussed. It was felt that such a clinic should be medically directed.

Dr. Osmers reported on the distribution of penicillin for civilian use. He stated that Maui County would receive 80 ampoules per month at the present time and he expected it to arrive in a day or so. Doctors would be required to fill in application blanks and also to report on the results after 10 days.

Dr. Howard Liljestrand of Aiea was guest speaker for the meeting. He showed his motion picture on

the "Technique of Caudal Anesthesia in Obstetrics." Afterwards the doctors present asked him numerous questions about this method of anesthesia. He reported good results in 90 per cent of his cases. He recommended this type of anesthesia and thought it was by far the best type of analgesia or anesthesia for labor. He pointed out the complications that may arise. He stressed the importance of having a well-trained nursing staff to help in caring for patients while under caudal anesthesia. He also stressed the importance of the doctor learning all he can about caudal anesthesia before using it. Many articles have now appeared in the literature. Dr. Liljestrand states that no more of the doctor's time is necessary to give caudal anesthesia to a patient than is required to give good analgesia during labor by other methods.

All members present congratulated Dr. Liljestrand on the excellent motion picture and thanked him for introducing us to caudal anesthesia.

W. B. PATTERSON, M.D., *Reporting*

The regular monthly meeting of the Maui County Medical Society was called to order by Dr. Patterson on August 8, 1944.

Members Present: Drs. Patterson, Balfour, McArthur, Kanda, Sanders, Osmers, Rothrock, H. Izumi, Tompkins, K. Izumi and von Asch.

Guests Present: Drs. Wilbar, Fitzgerald, Pinfold, Hansen, Morris and Schram.

Dr. Patterson gave a report for the Library Committee, of which he is chairman. Dr. McArthur moved that \$200 per year be spent for journals and text books for the medical library. Seconded and passed.

Dr. Balfour, chairman of Public Health and Legislative Committee, reported that his committee has considered a fee schedule for Public Welfare work and they recommend that we submit to Mr. Wilson a fee schedule based on the H.M.S.A. minimum fee less maximum deduction of 33 1/3 per cent. Dr. McArthur moved that the committee report be adopted with the exception of 33 1/3 per cent deduction which should be left to the discretion of the committee.

Dr. Patterson gave a short report on the workings of the lay committee which is working on the establishment of the H.M.S.A. plan on Maui. He stated that plans are progressing fairly well.

Dr. Wilbar, President of the Territorial Board of Health, was introduced and gave a short talk on Board of Health work. He stated that one function of the Board of Health was to initiate new projects which would affect public health. Also, it is necessary to continually review older functions and to alter or abandon them as indicated. He also stated that research is also an important function of the Board of

Health. Education of the general public is a most important feature as exemplified by the TBC cancer program. He stated that the Territory of Hawaii has a very good record in maternal and infant death rates. He recommended pasteurization of Maui's milk supply.

Dr. Fitzgerald, who has done such a good job on the Maui milk supply, was then introduced. He pointed out that in view of the rigid control of Maui milk pasteurization might not be necessary. He stated that pasteurization did not kill all pathogenic bacteria; he also pointed out that pasteurization inter-

feres with the souring of milk and in this way may allow old, high-bacteria-count milk to be consumed.

Dr. Pinfold reiterated that the problem on Maui is not similar to that of Mainland municipalities.

It was pointed out that newspaper publicity is undesirable as was brought out in the recent treatment of the pasteurization problem by the "Maui News." Any newspaper article should first be cleared through the committee on medical ethics and practice.

Meeting adjourned.

GEORGE VON ASCH, M.D., *Secretary*

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¹MARSHAL, E. K., JR.; BRATTON, A. C.; EDWARDS, L. B., and WALKER, E.: Bull. Johns Hopkins Hosp. 68:94 (Jan.) 1941.

²LYON, G. M.: West Virginia M. J. 37:54 (Feb.) 1941.

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⁴SIVON, I. A.; WISE, S., and BAXTER, E. H.: Ohio State M. J. 38:336 (Apr.) 1942.

⁵LYON, G. M.: J. Pediat. 21:809 (Dec.) 1942. (Proc., 11th Annual Meeting, American Academy of Pediatrics, Boston, Oct. 9-11, 1941).

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⁷SCOTT, J. C.: J. A. M. A. 122:588 (June 26) 1945.

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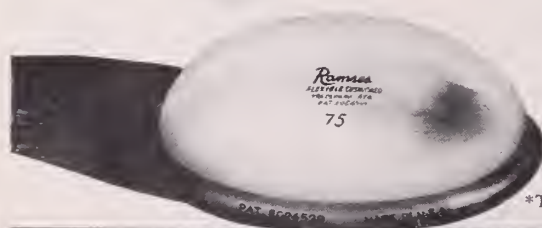


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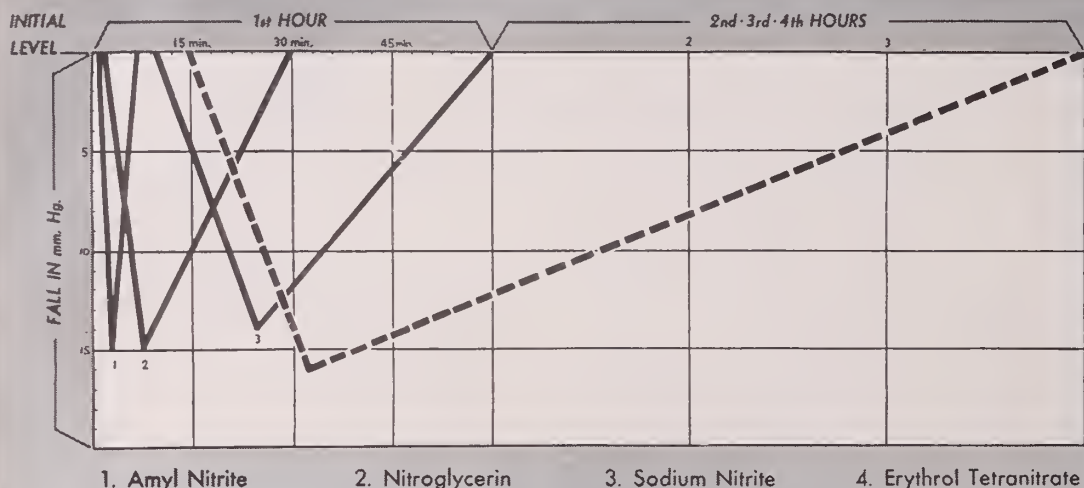


**Proc. Soc. Exp. Bio. and Med.*, 1934, 32, 241-245.

***Laryngoscope*, 1935, XLV, No. 2, 149-154.

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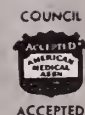
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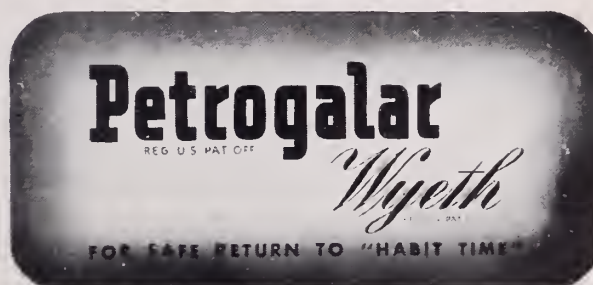


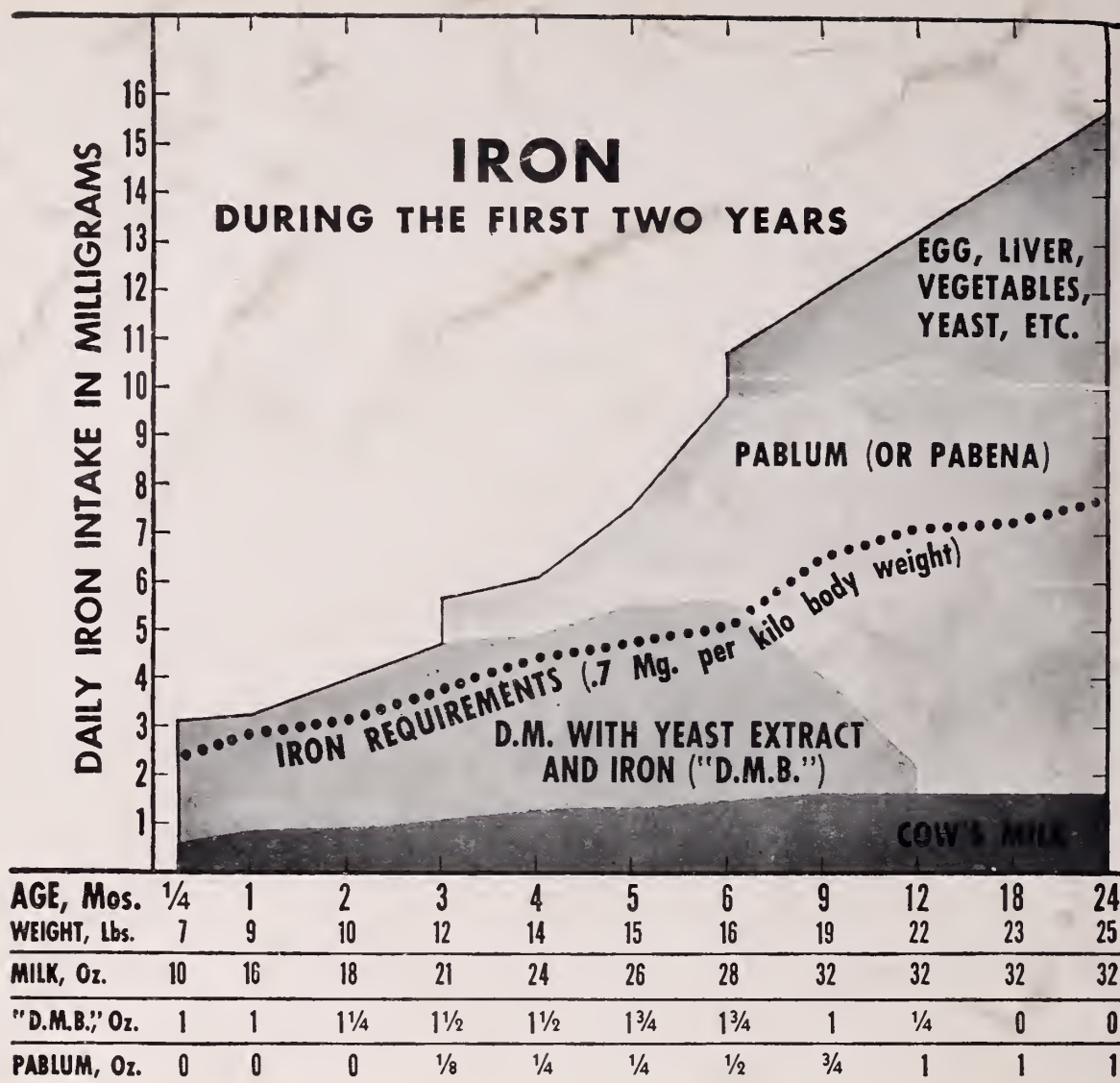
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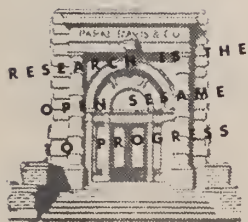
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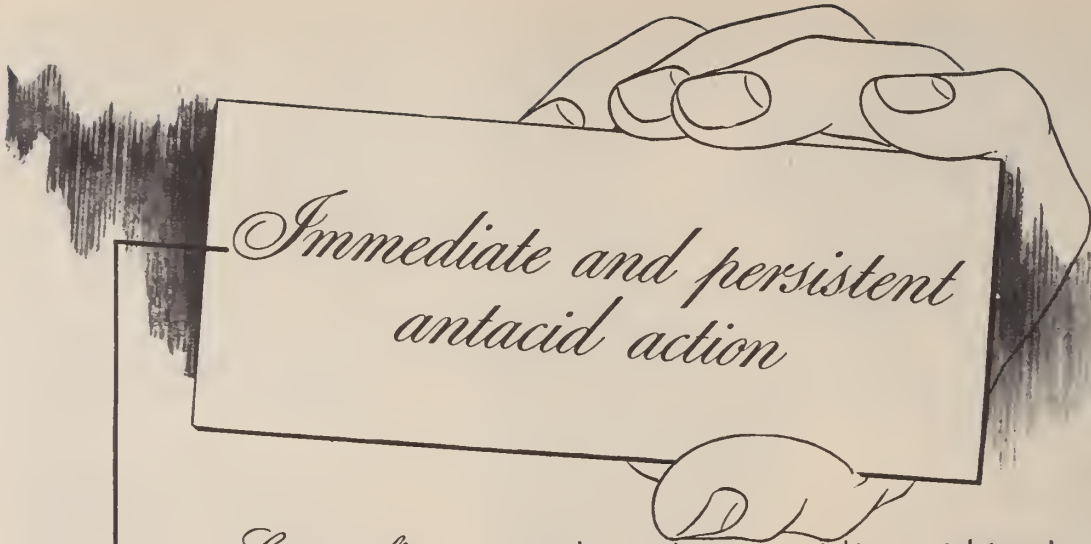
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Sexual Sterilization in Hawaii

H. E. BOWLES, M.D.

Honolulu

Casual observers have remarked that there seems to be an inordinately high incidence of sexual sterilization operations in Hawaii. This impression is borne out at least in part by the frequency of puerperal sterilizations here. A survey of the three nonsectarian hospitals of Honolulu shows that in Hospital A, 4.7 per cent of the 1,963 women who were delivered were sterilized in the puerperium. In Hospital B, 1.6 per cent of the 2,546 confined women underwent the operation. In Hospital C, 3.8 per cent of 800 women delivered were sterilized in the period just following delivery. In addition, however, a not inconsiderable number were delivered at home or in a church hospital where sterilization for the prevention of conception is not permitted. These patients were moved to Hospital C where puerperal tubal ligation or resection or both, were carried out, no consultation being required. These figures do not include sterilizations done at some time other than in the puerperium, nor cesarean sections with sterilization. It has seemed improper and unnecessary to try to decide whether these figures indicate a high incidence of cases presenting proper indications for the operation, or an average incidence of such cases plus a large number of cases sterilized without entirely adequate indications. Regardless of which explanation is the correct one, the percentages are high—too high.

In response to a letter of inquiry from the Honolulu County Medical Society, J. L. Baer¹, Vice-President of the American Board of Obstetrics and Gynecology and Rush Professor of Obstetrics and Gynecology at the University of Illinois, says: "I was startled at the high percentage of tubal ligations being carried out in your community. Unless your clientele is markedly different from the women we see in the States, the figures are certainly out of line with the best practice in this country."

In another letter received a few weeks ago, F. L. Adair², General Chairman of the American Congress on Obstetrics and Gynecology, says: "The percentage of sterilizations would seem offhand to be too high."

J. P. Greenhill³, Editor-in-Chief of the *American Year Book of Obstetrics and Gynecology*, says: "Adding up all the indications which I consider proper, the incidence of puerperal sterilization operations should certainly not be higher than 2 per cent."

When asked what percentage of puerperal sterilizations would constitute a good conservative figure, Titus⁴, Professor of Obstetrics and Gynecology at the University of Pittsburgh, and Secretary-Treasurer of

the American Board of Obstetrics and Gynecology, replied: "Your question of the incidence of sterilization operations applies to this attitude (viz., the attitude of the American Board of Obstetrics and Gynecology as to the number of sterilizations being performed) only insofar as what might be the attitude of the Board toward a candidate who reported to us that it was his custom to sterilize his patients as freely as the figures you have quoted would indicate. I think that he might find difficulty in passing our examinations because of obvious radicalism."

Observations such as the foregoing lead us to conclude that we are doing too many sterilizations in Hawaii. In order to get a better grasp of the situation and correct it, then, we should review the subject of sexual sterilization in its entirety, for surgery on both sexes is concerned therein.

CONSULTATIONS

Until very recently, no consultations were required before sterilization of a patient in any Honolulu hospital. (It is understood that hospitals where sterilizations are forbidden by the Church are not included in this discussion.) Recently, Hospital B—whose figure for puerperal sterilizations in 1943 was 1.6 per cent—passed a rule requiring consultation before the operation of sexual sterilization can be performed. At present this hospital requires that two consultants, selected from a small list chosen by the hospital, review the case and write the indications before the operation can be performed. Removal of diseased organs is a different matter and is beyond the scope of this paper. Regarding consultations on office sterilizations, particularly vasectomies, we can only guess.

There has been a notable lack of litigation rising out of the operation of sexual sterilization to date, in Hawaii. How long this state of bliss will continue, we can only conjecture. A lawsuit might arouse us from our lethargy. There are no laws in Hawaii governing the matter of sterilization.

It would seem highly desirable that consultations be scrupulously observed and each candidate receive a thorough investigation before any sterilization is performed. It is notably true that husbands and wives change their minds very easily. Thus there is all the more reason for thoroughness in analyzing each case. In one of our Honolulu hospitals, one woman had forged her husband's signature. Both blank spaces for signature of husband and wife were seen by an alert nurse to be in the same handwriting. The husband denied signing the paper and stated that he opposed the sterilization. The operation was not performed.

¹Read before the Honolulu County Medical Society, October 6, 1944.

METHODS OF SEXUAL STERILIZATION

Radiation with X-ray or radium is seldom employed for this purpose in the United States except for poor risks for surgery or patients who refuse to be operated on.

Vasectomy is usually an office procedure, done under local anesthesia. The operation is referred to rather cursorily, if at all, in textbooks of urology. The technic most favored locally has been well described by Strode⁵. This and similar methods have largely replaced the bilateral inguinal approach of former years.

Interval sterilization of the woman (or sterilization not in the puerperium). Sterilizations performed six weeks or longer postpartum should be included in this group. The uterus has had an opportunity by then to involute.

Simple tubal ligation was proposed by Blundell in 1834 and so far as we know was first performed by Lungren of Toledo, Ohio, in 1880. Between 1880 and 1896 Williams⁶ collected 42 cases of tubal sterilizations with two failures.

Various methods are in use today, including a simple ligation of a U-shaped loop of oviduct, complete bilateral salpingectomy, resection of the uterine cornua, etc., with numerous modifications of each method. Probably in this group should also be included the occasional sterilization done by hysterectomy for sterilization purposes and not for any intrinsic lesion. This is fortunately seldom done, and probably never justified.

Williams⁶, in 1928, after analyzing the statistics of the Johns Hopkins Hospital, concluded that "the only practical routine method of tubal sterilization consists in excising its proximal end from the uterine cornua and carefully closing the wound with fine sutures."

Aldrich⁷ has described the technic of a plastic operation whereby temporary sterilization of a woman was effected. The woman was subsequently able to bear another child. The operation has not apparently been widely used.

Irving's⁸ operation for tubal sterilization is favored by many surgeons. It consists of ligating and severing the Fallopian tube about 1½ inches from its cornual insertion. The proximal end is then slightly freed from the mesosalpinx, and transfixed by a double suture just proximal to the tie. The proximal tube-stump is buried beneath the serosa just above the uterine insertion of the round ligament on the corresponding side.

In the woman who has been delivered by cesarean section, Watson⁹ (Sloane Maternity) sterilizes after two or three sections. He says further regarding sterilization of the female: "In those cases where hyster-

ectomy is not done, I personally prefer resection of the isthmic portion of the tube, covering the proximal end accurately with the peritoneal folds of the broad ligament. I may have had failures by this method but none have so far come to my attention."

Hysterotomy and sterilization. This was advocated by J. B. Deaver¹⁰, a widely known general surgeon, in 1912. The operation was not well received. He emphasized that it should never be used where there had been previous tampering with the pregnancy through the vaginal tract. Mendenhall¹¹, in 1932, reported a series of 37 cases of therapeutic abortion by this method, all with clear-cut medical indications. In 1944 the operation still does not appear in extensive use.

Vaginal therapeutic abortion and sterilization by one of the various methods of tubal ligation or resection, or both. This should be done only early in the pregnancy if at all, and, of course, only where there has been no opportunity for metritis through previous tampering.

Tubal ligation through the vagina is not widely used in the United States, nor is Dickinson's¹² intra-uterine electro-coagulation of the cornual portions of the Fallopian tubes.

Abdominal puerperal sterilization. (This is usually performed in from twelve hours to three days postpartum.) The pioneer work in Europe seems to have been done by Skajaa¹³. In the United States, the operation was introduced by Adair and Brown¹⁴ in the Chicago Lying-In Hospital. Its proponents favor the operation over other methods, especially for those women of a lower economic level who often feel they cannot afford on grounds of time alone to be hospitalized at some future date for sterilization. The fact is also brought out that many of these women will again become pregnant in the interim before the readmission for sterilization. It is primarily for this class of patients that the operation was introduced, and not for the patient who could return at some future date for an interval operation. Most patients are able to leave the hospital almost as soon after the delivery as if the operation had not been performed.

In 1937, at a discussion of Treadwell's paper¹⁵ on birth control in rural Hawaii, Adair cautiously mentioned that a small series of puerperal sterilizations was being studied in the Chicago Lying-In Hospital. He and Brown¹⁴ reported this series of carefully worked up cases in 1939.

Schumann¹⁶ considers postpartum sterilization a generally indefensible procedure. He calls our attention to the fact that the paper of Adair and Brown¹⁴ was not an appeal for the extension of puerperal sterilization but was aimed to encourage employment of the operation early in the puerperium, *i.e.*, within twenty-four hours after delivery if it is to be used at all. Everyone should read Schumann's article.

Scott, of the University of Toronto¹⁷, feels the operation is inadvisable, and although a fair number of sterilizations are done in the Toronto General Hospital they are always carried out after the puerperium. In no instance was a puerperal sterilization performed except in a few cesarean sections with obstetrical indications.

In personal communications received from leaders in obstetrics in the United States and Canada, figures tabulated showed that in no case did the incidence of puerperal sterilization reach such figures as 3.8 per cent or 4.7 per cent of all women delivered in the year 1943 in two of our Honolulu hospitals. The highest figure obtained in the United States in tables studied by the author was 1.8 per cent of all deliveries in that hospital. In most institutions the figures were far below 1 per cent.

It is interesting to note in a paper by Larsen¹⁸ that the number of sterilization operations performed in the plantation hospitals of rural Hawaii has declined recently rather than increased.

Variations of technic are numerous. Some are content with the original operation of Madlener who ligated a U-shaped loop of each Fallopian tube. Some report favorably on this method over a long period of time, with a small per cent of recurrence of pregnancy. Our experience with the method here in Hawaii has been disappointing. Various types of ligature including large sizes of plain and chromic catgut, silk, and linen have been used. Recanalization has occurred in more instances than is generally believed though actual figures are hard to obtain. It is felt that in some cases this is due to too firm tying of the ligature especially where smaller caliber material is used, the sutures sawing through an ischemic area thus permitting stump to stump apposition and recanalization. The tubes are particularly vascular and prone to be edematous in the puerperium and hence more readily injured than at some other time. Pomeroy's method is preferred by many. It consists of a resection of each tube and is favored by Thornton and Williams¹⁹ who describe it. Hewitt and Whitley²⁰ employ a slightly different method. They crush and ligate each tube in three places, tying with linen ligature. They claim no failures in 100 charity class patients. In 25 private patients in addition to the above, they report one failure and one death twelve days postpartum due to embolism.

ANESTHESIA

Vasectomies are usually performed under local anesthesia with novocain. Fewer cases are done under spinal or general anesthesia. It is the exceptional case that cannot be managed by local infiltration technic.

Interval tubal resection, hysterotomy and tubal resection and/or ligation can be managed satisfactorily with careful pre-operative narcosis and local nerve

and field block. Spinal, general anesthesia, and intravenous anesthesia all have their uses and can be chosen to suit the individual case.

As to anesthesia in puerperal sterilizations, particular care should be used in selection because of the added factor of large uterine sinuses, dilated varicosities of the broad ligaments, hemorrhoidal plexus of veins, etc.

Adair and Brown¹⁴ advocate local anesthesia with careful preoperative narcosis using divided doses of scopolamine and morphine. Spinal anesthesia is preferred by Thornton and Williams¹⁹, and various types of general anesthesia from chloroform on through to cyclopropane and other gases are favored by many. Intravenous anesthesia is favored by some. The ever-present danger of embolism secondary to the breaking loose of clots from the uterine sinuses, veins of the hemorrhoidal plexus and broad ligament, however, hangs over one's head. It is also a demonstrated fact that portions of placental tissue may invade uterine sinuses and serve as emboli.

It is an all-too-true and lamentable fact that general or spinal anesthesia is selected mainly because it is less trouble to the surgeon who is impatient to hurry along to something else. Early in the puerperium, the uterine fundus with its attached tubes lies near the anterior parietal peritoneum as the incision is made. This renders the tubes peculiarly accessible, and local anesthesia with divided dosage pre-operative narcosis as advocated by Adair and Brown¹⁴ should suffice for most cases.

COMPLICATIONS

Failure to sterilize is noted occasionally in vasectomy. If the technic as described by Strode³ is rigidly adhered to, there should be no difficulty. It must be borne in mind that sufficient time must elapse after the operation or impregnation can occur by the residual sperms in the distal portion of the vas deferens. Recanalization may occur in the various tubal operations, with subsequent pregnancy developing. Pregnancies have been reported where extensive tubal resection or excision has been carried out but where a small uterine fistula remains. It has been reported that pregnancy has occurred even following supravaginal hysterectomy, the sac developing on the residual cervical stump. How then can we furnish iron-clad guarantees?

Many patients come to their physicians saying that they understand that it is very easy for them to be sterilized temporarily and that they would like to have an operation for this reason rather than to bother with contraceptives. In the Territory of Hawaii this idea seems widespread,

J. Lam²¹ reported in 1933, referring to vasectomy: "Considering the reversibility of this operation, we do not hesitate to sterilize when there is adequate indication."

In general, neither vasectomy nor the various forms of operations on the Fallopian tubes are considered so readily reversible that the patient can be assured that success is more likely than failure. It is a peculiar fact that when it is most urgently desired that sterilization be permanent, it may be temporary through recanalization or some other accident. On the other hand, the operation blithely carried out and later regretted may prove to be only too permanent when reconstruction is attempted.

Immediate complications such as shock, hemorrhage, anesthetic accidents, etc., may occur in the abdominal sterilization operations. Skajaa¹³ has reported 7 cases of thrombosis and 1 of embolism in 46 puerperal sterilizations, carried out between the fifth and twenty-ninth postpartum days. In 12 cases done on the fifth and sixth days, 4 cases of thrombosis and 1 of embolism occurred. Underlying heart or kidney disease, hypertension, etc., may be the causative factor in various types of complications that may occur here, as they do in the other types of surgery.

Death occurred on the fifth postoperative day in an obese woman sterilized in the puerperium in the series reported by Thornton and Williams¹⁹. The patient was suffering from hypertension, diabetes, pyelitis, and developed pneumonia. It is not stated what anesthesia was used. In a woman who must have been obviously a poor risk, one may well ask whether so-called "economic reasons" were the basis for choice of the sterilization operation in the immediate puerperium, rather than to have the operation done at a safer time after involution and convalescence from delivery?

If one stops to consider the huge uterine venous sinuses, varicosities in the broad ligaments, and hemorrhoidal venous plexus, one must realize that there is a greater possibility of thrombosis and embolism in the puerperium than at any subsequent time. Realizing this fact, Adair and Brown¹⁴ have urged sterilization early, if at all, in the puerperium, though not as early as Whitacre suggested. Whitacre urged that it be done immediately after delivery. Hewitt and Whitley²⁰ have been among the bolder and have sterilized 100 charity patients one hour postpartum. They claim a morbidity of 2 per cent using the standard of the American Committee on Maternal Welfare as a gauge (*i.e.*, temperature of 100.4 F. or over on any two days after the first twenty-four hours postpartum, oral temperature taken at least 4 times daily). Is not the risk of shock and hemorrhage, one hour postpartum, greater than, say, twenty-four hours later? How can we see just what is around the corner in this respect?

Thornton and Williams¹⁹ claim an incidence of 21 per cent morbidity and in the same paper admit having performed appendectomies at the same time in 178 out of 300 cases of puerperal sterilization. They also claim that there is no constant relation found between morbidity and the time in the puerperium

when the sterilization (and appendectomy!) is performed.

All careful operators who have performed puerperal sterilizations are agreed that the operation is contra-indicated in those cases where there have been vaginal manipulations such as forceps deliveries, podalic version or numerous vaginal examinations.

We cannot ignore, however, those cases of virulent postpartum infection in which the patient has delivered easily and spontaneously, in which no vaginal examinations have been done, and in which the patient may be a nurse or a physician's wife who has followed all directions most faithfully. Who of us is there who has had any great number of deliveries who has not encountered them?

In electing to perform puerperal sterilization, then, we are caught between the possibility of postpartum hemorrhage and infection on the one hand if we do it too early, or thrombosis and embolism on the other hand if we operate later in the puerperium.

In 25 private patients in addition to the larger charity series of 100 puerperal sterilizations reported by Hewitt and Whitley²⁰ 1 death occurred on the twelfth postpartum day in an obese patient with hypertension following ether anesthesia. Here one cannot but ask why a puerperal sterilization was done on a known poor risk and, above all, why the risk was magnified by using ether anesthesia rather than a local? All obstetricians should be familiar with the histology of the puerperal uterus, which is well described by Novak²², Hobbs²³ and others in their texts. Do not let us forget the extensive thrombosis in the uterine vessels, especially just beneath the placental site.

HOW CAN THE OPERATIONS FOR SEXUAL STERILIZATION BE REGULATED?

In a recent reply from MacEachern²⁴ to the inquiry of the Honolulu County Medical Society, the following reply was received: "So far as the American College of Surgeons is concerned, for an approved hospital the following procedure is carried out before a sterilization operation is performed:

1. An accurate and complete medical record of the patient must be provided, this to include a history, physical findings and essential laboratory or X-ray data.
2. The medical record must set forth clearly the indications for operation and these should be supported by the data recorded in the medical record.
3. There should be appointed a committee of three from the medical staff to review the findings, indications and all other facts in the case, and make recommendations of their opinions in writing. This committee can best consist of an internist, a surgeon and an obstetrician and gynecologist, who should be

appointed by the hospital management, with the advice of the chief of staff, head of department of obstetrics and gynecology or the executive committee of the medical staff. It is advisable to have a procedure such as I have described incorporated in the by-laws, rules and regulations and policies of the medical staff. The committee may be a standing committee, that is, the same group may serve for an entire year.

4. Approval of operation depends on the pathological condition or medical condition and its effect on the life or health of the patient. Following operation the pathologist should make a complete and recorded report of all the findings. The operation should never be performed for social reasons."

Arestad²⁵, of the Council on Medical Education and Hospitals of the American Medical Association, in a recent communication to the Honolulu County Medical Society, states: "...there is no special reference or regulation covering the problem to which you have referred." He referred to MacEachern's²⁶ text on Hospital Organization and Management, as follows:

"... The question of sterilization must also receive consideration. Until recently, sterilization without pathological indications was absolutely prohibited, but there appears to be a tendency at the present time to sterilize at the request of the patient, a practice which is to be deprecated. The ordinary means used in contraception do not concern the hospital but permanent sterilization does. It can be carried out only in the hospital and it involves the whole future life and marital relations of the patient. No hospital should ever allow a sterilization to take place in its operating rooms unless it is absolutely unavoidable or there is very definite and strong pathological indication. Consultation must be a prerequisite...."

INDICATIONS FOR SEXUAL STERILIZATION

Here we range from the theological viewpoint of the Roman Catholic Church, which holds that it is never permissible, to the opposite viewpoint, that it is permissible even in the total absence of any medical indication whatever, if the husband and wife merely agree that they wish it.

It is a disturbing fact to realize that there are graduates of medicine, licensed to practice in various communities and often capable of performing surgical operations with brilliant technical skill, who fail totally to realize the gravity of the request and the responsibilities which it entails. I have previously in a paper entitled "Sexual Sterilization: The Physician's Obligation to His Patient²⁷," tried to emphasize a few of the obligations of the practicing physician who may be confronted with a request for sterilization for prevention of conception.

It is doubtful whether there is any phase of the practice of medicine that has a greater potentiality of

bringing happiness or tragedy in the days to come. When a hospital fails to properly regulate the performance of sterilization operations, the patient is often entirely dependent upon the doctor, whose decision may not always be in the best interests of the individuals.

Adair and Brown¹⁴, in their series of 50 puerperal sterilizations reported in 1939, included only those with strictly medical indications. The 50 were distributed as follows: cardiac 27, cardiovascular disease 4, chronic infectious disease 6, constitutional disease 3, neurologic diseases 7, vascular disease 1, cardiovascular and renal disease 2. Indications enumerated by Thornton and Williams¹⁹ in 309 cases of poorer class patients treated at the University of Virginia are as follows: Excessive multiparity 175, hypertension and/or nephritis 84, cardiac and vascular diseases 15, nervous and mental diseases 10, secondary perineorrhaphy (at delivery) 9, pyelitis and pyonephrosis 7.

Wyckoff²⁸ says, in discussing disease in general in relation to sexual sterilization: "In acute disease it is difficult to think that permanent sterilization would ever be indicated." Among the various diseases in which the question of sterilization may arise are the following:

Leukemias. In general in this condition, as in other chronic illnesses where conservation of body energy is essential, pregnancy should not be encouraged. However, the literature contains reports of many successful pregnancies in leukemia. In Conner's²⁹ case a living child was produced, and the course of the mother's leukemia was not affected. In the youngest of the series studied, the mother delivered a healthy baby years after the diagnosis of leukemia had been made. This subject has been completely reviewed by Hochman³⁰ who details 2 cases. It is his contention that a pregnant leukemic woman should be allowed to go to term, as the pregnancy will neither shorten her life nor result in a leukemic child. On the other side of the balance are the opinions of Vignes³¹ and Kosmak³² who believe that pregnancy should not be allowed to go to term. *This is not the opinion of the majority, and figures would lead us to side with Hochman³⁰, Forkner³³, Hofstein³⁴, Grier and Richter³⁵, and others. Whether a woman with an incurable and fatal illness should be prevented from bearing children which she will not live to bring up is a question which must be answered for each individual case.

Anemias. Most can be relieved by diet or by iron therapy or combination of the two. Wyckhoff²⁸ knows of no cases of Addisonian anemia that show the course of the anemia to be adversely affected by the occurrence of pregnancy or where the children born of such a mother were inferior.

Erythroblastosis fetalis. This is a condition which is apt to repeat itself in subsequent pregnancies. The hereditary nature of the disease has been shown by

Levine, et al³⁶. Eastman³⁷ stated in 1942 that contraception would seem indicated in any mother who has given birth to such a child. He said nothing regarding sterilization and said further, "It is to be hoped that further studies on the iso-immunization theory of erythroblastosis fetalis will yield some method whereby Rh-negative mothers may be treated and further erythroblastic infants prevented."

Hyperthyroidism. With true hyperthyroidism and true heart disease, the pregnant woman fares badly and in uncontrolled hyperthyroidism conception is contra-indicated. Simple hyperthyroidism does not contra-indicate pregnancy.

Diabetes mellitus per se is no contra-indication to pregnancy. Some feel that sterilization is indicated on account of the hereditary tendency of the disease. With rapid advances in the modern treatment of diabetes this point may be vigorously disputed. Just recently there have appeared startling new advances in carrying pregnancies to successful termination in diabetics through the use of luteal hormones.

Renal disease and hypertension. Pregnancy is distinctly risky in active glomerulonephritis, with renal functional impairment. With latent glomerulonephritis, i.e., proteinuria without hypertension, there is no contra-indication to pregnancy and these women are apparently no more susceptible to untoward occurrences than some otherwise normal cases. Uncomplicated essential hypertension is no barrier to pregnancy as has been the experience of most men who have had any great number of maternity cases. When the diastolic blood pressure rises well above 100 as is not uncommon in these cases, it is well to forestall premature separation of the placenta by the induction of labor a short time before the expected date of delivery.

Wyckhoff²⁸ points out that if a patient has had two successive toxemias of late pregnancy, it is the rule for further such recurrence in another pregnancy. Moreover, regardless of how prompt recovery from the toxemia was, reappearance of even a mild grade of persistent hypertension makes the chance for recurrence of the late toxemia great (about 60 per cent). In the recurrent toxemias, 50 per cent develop persistent hypertension.

Rheumatoid arthritis. The general agreement is that pregnancy is contra-indicated as treatment of the arthritis consists of conserving the patient's strength. Wyckhoff²⁸ believes this arthritis is not benefited by pregnancy despite occasional apparent subsidence of joint trouble during pregnancy.

Heart disease. In the past three decades there has been a gradual change in the outlook of physicians regarding pregnancy in cardiacs. This applies to both sterilization and the care of cardiacs during gestation. This has largely come about as a result of the careful study of pregnant cardiacs by obstetricians in coopera-

tion with cardiologists. No better example of such a study can be given than a recent book, "The Heart in Pregnancy and the Child-Bearing Age," by B. E. Hamilton and K. J. Thomson³⁹. These men record their experiences with 850 "cardiacs" during pregnancy seen at the Boston Lying-In Hospital from 1921 to 1938.

It must be remembered that no two cardiac patients are alike as regards their functional capacity, heart size or valvular lesions. It is possible, however, to divide patients with heart disease into a generally favorable and a generally unfavorable group. Among the criteria of an unfavorable cardiac case are:

1. Signs or history of heart failure.
2. Dangerous disorder of the heart rhythm, such as auricular fibrillation.
3. A serious complicating disease, such as tuberculosis, nephritis, etc.

There are certain valvular lesions which carry relatively a poorer prognosis than others. In deciding whether or not a woman should be sterilized for cardiac reasons, it behooves the physician to be thoroughly familiar with the risks involved in the particular case at hand. He should quite frankly state the risk of gestation to the patient, and leave the decision up to her. Gone are the days when a patient should be persuaded to be sterilized because of a "heart murmur." There are extensive data available upon the risk a given set of conditions entails during gestation and these are the criteria which should be discussed with the patient. So far as possible, the patient herself and her husband should be allowed to make the decision regarding sterilization. In the event that she wishes to be sterilized when there are insufficient grounds to warrant it, the physician should, of course, refuse to sterilize her. If, on the other hand, she clearly understands the risk she is taking on bearing a child and insists on taking it, the responsibility is hers and the doctor then must render the best care he can.

To summarize:

1. Know all the facts about risks in cardiac patients during pregnancy.
2. Present these frankly to the patient.
3. When there are sufficient grounds for sterilization, the patient should decide.

(I am indebted to Dr. A. S. Hartwell, who wrote the foregoing section on heart disease.)

Tuberculosis. Active infection may be aggravated, according to Wyckhoff²⁸, but there are many complicating factors that must be considered before permanently denying pregnancy. Adequate rest, and collapse therapy, have permitted child-bearing, under careful regimen, to many couples.

Eastman³⁷ states: "The old and much debated problem concerning the effect of pregnancy on pulmonary tuberculosis seems to have been settled at last, as the result of a number of searching statistical studies, both experimental and chemical, which have been carried out during the past decade. The answer would seem to be: 'Childbearing *per se* exerts no effect, either deleterious or beneficial, on the course of pulmonary tuberculosis'."

Eastman³⁷ calls our attention to the fact that Forsner³⁸ showed that mortality among 341 tuberculous pregnant women was not different from that of 396 non-pregnant tuberculous women. Marshall⁴⁰ has compared 309 non-pregnant women and 303 pregnant women in various stages of the disease. In the group of "dormant" or "healed" cases, 2 per cent of the non-pregnant and 1 per cent of the pregnant patients died the first year. With the advanced disease, 46 per cent of the non-pregnant women died compared with 27 per cent of the pregnant women. Ornstein and Kovnat⁴¹ of the Sea View Hospital, New York, obtained similar figures from a study of 85 pregnant tuberculous women. Barnes and Barnes⁴², State Hospital at Wallum, Rhode Island, produce similar data. Eastman³⁷ explains, and others emphasize repeatedly, that not only must the tuberculous patient be hospitalized during the entire gestation period, but for the nine months or so following delivery. In addition the mother must be separated from the infant for a year or so, and when she finally does leave the hospital, she should have adequate help at home.

Syphilis. Syphilis *per se* is no contra-indication to pregnancy. Effective, early, and faithful treatment is the answer. Early prenatal care is necessary, of course, in order to secure healthy children from a mother known to have syphilis.

Excessive childbearing (or excessive multiparity). What is excessive multiparity? Excessive, of course, means "too much" or "too many" and from a medical point of view should be taken to mean that the childbearing has continued to the point of injury of the maternal organism and that further reproduction may result in death or serious damage of the mother. Eastman³⁷ has given this condition exhaustive study. He emphasizes that the "grand multipara," a term borrowed from the French who apply it to a woman who has borne five or more babies, particularly the woman in her eighth or ninth pregnancy, faces a much greater maternal and fetal mortality than women in the lower parity groups. This subject is treated so extensively by Eastman that the reader is referred to his papers for further details.

It is beyond the scope of this paper to attempt to say exactly what excessive multiparity is. It must be considered along with economic factors which influence personal habits, diets, etc., all of which are involved in the term medical indications. Six might be considered a good figure if one must be had.

Yerushalmy⁴⁴ has shown that the mortality rate for the eighth and ninth delivery is twice that of primiparae and three times that of women having their second or third infants. His and Eastman's⁴³ studies also show that stillbirth and neonatal mortality rates rise markedly after the sixth child. In another study on maternal and fetal outlook, Eastman⁴⁵ shows in conclusive figures that "after a certain optimum probably in the early twenties, maternal aging means inevitably somewhat higher risks to both mother and child. Also for the best maternal and fetal outlook we are inclined to believe that youth is a better ally than child-spacing." Among the death dealing complications in the grand multipara, the commoner are rupture of the uterus, hypertensive disease or chronic nephritis and placenta previa.

Previous cesarean section. Just how far to trust the previous uterine scar in a fresh pregnancy is not easy to say. At best, Eastman⁴³ says, "The cesarean section scar, therefore, is never to be trusted completely no matter how well it may have behaved in the past. This danger is usually met by tubal sterilization after the second or third operation."

We still do not believe with some that, "Once a cesarean always a cesarean." Occasionally, labor and vaginal delivery are the method of choice. The type of incision used is important, especially the classical versus the low cervical type: preponderance of opinion is in favor of the low segment scar.

Eugenic sterilization. The psychiatric point of view in sterilization is covered by Shanahan⁴⁶.

Blindness. Of 200,000 cases of blindness in the United States 10 per cent are attributed to heredity. Macklin⁴⁷ lists the hereditary diseases of the eye.

Deafness. The tendency of the deaf to marry the deaf and perpetuate the disorder was pointed out by Alexander Graham Bell⁴⁸. In Sweden, figures have shown that two-fifths of the offspring of deafmutes inherit the disease from their parents⁴⁹.

Monstrosities. Studies carried out by Murphy⁵⁰ and associates bring out the fact that if the mother has had one malformed child, the likelihood of her having another is about one in nine. Eastman³⁷ feels that "It would seem only common sense to prevent further pregnancies in all women who have had 2 malformed children."

Miscellaneous and for the most part uncommon diseases including hemophilia are listed by Eastman³⁷, and more in detail by Macklin⁴⁷, Snyder⁵¹, and Bauer⁵² and associates.

Economic distress. Eastman³⁷ says after discussing the incidence of various diseases, and infant mortality in the poor, "Dire economic distress may very truly constitute a medical reason for family limitation." He refers here to birth control, not sterilization.

It stands to reason that poverty leads to the spread of tuberculosis, malnutrition, etc., in turn bringing about a state of the maternal organism which may then constitute a grave hazard to childbirth. The rational approach, of course, is to correct the economic distress. We cannot "harp" too much on this. It has been suggested that mainland American economic standards do not apply to the Territory of Hawaii. This treatise cannot attempt to delve into the intricacies of Island economics. In any event, the use of a permanent method of preventing pregnancy based on an indication which may only be temporary is manifestly illogical.

WHAT SHOULD BE DONE IN HAWAII?

Treadwell¹⁵ in 1937, in his paper dealing with the rural birth control problem of Hawaii, said, "Each specialist may find reasons for advising a woman not to have children, the obstetrician, the phthisiologist, etc. . . . But outside of these absolute indications there is a broad field of relative indications, where the question is a matter of judgment. That is, there is a sum-total of relative factors, but when all of them are taken into consideration, the indication may approach the absolute."

Seven years have passed since the above remarks during which increasingly complete studies have been made in the effect of disease on pregnancy, and of pregnancy on disease. Many of our sterilizations may not be necessary in the light of new methods of treatment. Economics are notoriously fluctuant, and shifting. We are realizing this now in war, as we did in the so-called eras of peace and prosperity, the stock market crash, etc.

Douglass⁵³, referring to the Department of Obstetrics, University of Maryland, says, "When the question arises in our own clinic, we have been in the habit of referring the patient to the necessary consultants, and when all of their opinions are at hand the case is brought up for discussion before as many members of the obstetric group as can be present. Everyone feels free to voice his opinion and after a full discussion, the question is decided."

If our Island community could approach the problem from this angle we would truly be approaching the ideal state of affairs. A single consultant in this community seems insufficient. If he be conscientious he is frequently the target of unfair criticism. If his conscience be elastic enough, his "indications" may satisfy a mere hospital rule. This is hard on the man who takes his work seriously, and it is embarrassing at times. Personal feelings creep in where they have no business to be. "So and so" gets the reputation of being an obstructionist. The tendency is to call another who has more lenient views.

It would be better to have a group of, say, three physicians, whose integrity is respected in the community and who cannot be accused of favoritism. It

is felt that though the local profession would object somewhat, and with some reason, to its being time-consuming and delay-producing, most physicians would feel relief at being able to refer the matter to an arbitration board. This can be done. If it be contended that there are so many sterilizations that we simply have not the time to review the individual case thoroughly enough, then we must do considerable explaining. Such a viewpoint cannot be tenable. If we have insufficient time to work up a case for puerperal sterilization before the optimum twenty-four-hour period has been passed, possibly it might be postponed until after the puerperium. We cannot plead that the patient cannot be readmitted because of lack of dollars—at least, not now!

Another passage from Treadwell's article¹⁵ may well furnish food for thought:

"A woman has a right to be sterilized if she intelligently wishes to close her childbearing career, whether the intelligence be her own or her physician's and to miss the golden opportunity offered by an open abdomen or an anesthesia of the perineum and lower abdomen is as inexcusable as the refusal to remove a normal appendix during the course of a laparotomy."

Personal equation in the physician is so great a factor that it seems impossible to regard all physicians as possessing equal ability to decide who shall be and who shall not be sterilized.

The facts are squarely before us. We must set our house in order before lawsuits, or public upheavals, bring to the people the fact that things are not as they should be in regulating the operation of sexual sterilization. We do not wish to have laws passed that would forbid all sterilizations even when indicated for urgent medical reasons.

Birth control has its rightful place. Its aims have never been better summarized than by Eastman³⁷ in his monumental paper which should be read by all. If our social structure is at fault, let us work to improve this, approaching the problem through the "front door."

SUMMARY AND CONCLUSIONS

1. There is strong evidence that too many operations for postpartum sexual sterilization are being carried out in Honolulu hospitals. In Hospital A, 4.7 per cent of 1,963 women delivered in the year 1943 were sterilized in the puerperium. In Hospitals B and C the figures were 1.6 per cent of 2,546 deliveries and 3.8 per cent of 800 deliveries for the same period of time.

2. Until recently no Honolulu hospitals have required consultation before a patient could be sterilized. Hospital B (puerperal sterilizations 1.6 per cent in 1943) now requires two consultants picked from a list furnished by the Hospital. Hospital C

(puerperal sterilizations 3.8 per cent in 1943) voted to require a consultant, this regulation to be included in its new by-laws and regulations. Hospital A (4.7 per cent in 1943) has no consultation requirement.

3. As vasectomies are nearly always office procedures, no information is at hand as to the incidence. It is generally conceded to be freely performed, and usually without consultation.

4. The various methods of sexual sterilization are reviewed, including technic and anesthesia.

5. Complications of the operations are discussed. Evidence accumulated shows that puerperal sterilization is not as innocuous a procedure as some have regarded it. Thrombosis and embolism are reported. Extreme care is necessary in selection of cases.

6. It is the consensus of recognized authorities that consultation should be a prerequisite to sexual sterilization, preference being for the balanced opinion of internist, surgeon, obstetrician and psychiatrist. Each case must be thoroughly reviewed, and indications clearly stated.

7. Candidates should be selected on the basis of medical and not sociological reasons. It is recognized that excessive multiparity, especially in the older age group, and dire poverty, may constitute genuine medical indications.

8. As treatments of various diseases undergo improvement, indications for sterilizations decrease.

9. Where poverty and poor social conditions are the basis for the issue of sterilization, we must strive to improve our community along these lines.

10. It is time for us to review the over-all situation and institute proper governing regulations throughout the Territory of Hawaii. If medical societies or hospitals will inaugurate their own rules, legislation should not be needed.

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Sterilization

LOCAL ASPECTS OF A GENERAL PROBLEM

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I recently delivered a patient of her third baby. Little or no trouble had been experienced with any of her pregnancies. The social and to a less extent the economic conditions in her home made it seem advisable to concur with her desire for a sterilization. The patient's husband and mother both agreed. All parties concerned thoroughly understood the irrevocable nature of the operation. A consultant agreed.

On scheduling the operation, however, I was told that my opinion and that of my consultant could not be accepted in that hospital, and that one of a small group of three already-designated persons was to pass judgment on the ethics of the situation and decide whether or not the operation would be permitted. It was subsequently made plain by them that it would not be permitted.

It is not proposed at this time to discuss the ethics of this particular case, but to consider certain methods of exercising control over a purely moral question, which—I would like to point out—is not a legal one.

There is a tendency today toward the establishment of small tight boards and committees which exercise dictatorial control over the conduct of medical practice. It is unnecessary to cite the many examples of this. So long as they act as directives for the opinion of the medical fraternity as a whole, they are productive of much good.* We see an example of this in the compulsory consultation with an expert before a cesarean section can be performed.

This situation I believe meets with the approval of the great majority of physicians, primarily because of one very important fact: that the indications for the use of this procedure involve the exercise of highly

technical judgment. I am sure that in this situation the great majority of us welcome the advice and help of our specialist colleagues.

The question of sterilization, on the other hand, is as far removed from that of cesarean section as it is possible to get. They are at opposite poles. The latter is highly technical; the implications of the former are almost purely social.

There is no criticism whatever implied here of the moral or technical qualifications of the board of three designated consultants, for they are among the best we have. The great danger in this situation, however, lies in the fact that the opinions of any small board on this purely social issue *could* be wrong, and since they *are* opinions, and opinions only, they could be subject to prejudice and could be in conflict with the majority of our other colleagues' opinions.

Changes of ethical standards are best promoted within the profession, not by the arbitrary dicta of small minorities but by open and frequent discussion and by a conversion of the majority to the beliefs of the minority if that minority can convincingly show itself to be right.

If there are too many sterilizations being performed, let us, at the proper time, discuss it freely and openly and often. Until that time it seems to me the majority opinion of our local profession should continue to be considered as honorable and as sound as it has proven itself to be in the past. And it also seems to me that the opinion of any one of our reputable colleagues is sufficient for proper consultation and is the best method to follow before performing a sterilization.

Read before the Honolulu County Medical Society, October 6, 1944.

Young Hotel Building.

Neuropsychiatric Aspects of Sterilization

WM. M. SHANAHAN, M.D.

Honolulu

So far as recognized neurologic and psychiatric disorders are concerned, the advisability of sterilization is related in part to the hereditary possibilities and in part to the competence of the individual involved to properly support, train, and guide the children he may have.

INHERITANCE OF NEUROLOGICAL DISEASE

The literature on neurologic disorders is fairly consistent in agreeing that a number of rather infrequently-appearing conditions are definitely hereditary, to such a degree as to make it inadvisable for patients so afflicted to have children. Some of these conditions include Huntington's chorea, athetosis of a special type shown as Oppenheim's disease, Friedreich's ataxia, spastic spinal paralysis, progressive muscular atrophy, muscular dystrophy, myotonia, syringomyelia, paroxysmal paralysis, hereditary optic atrophy, and Von Recklinghausen's neurofibromatosis¹. There are probably other neurologic conditions which could be included in this list; however that may be, the sum total of all these conditions in terms of numbers is not great.

INHERITANCE OF PSYCHIATRIC DISORDERS

So far as heredity in relation to psychiatric disorders is concerned, one can find about anything in literature which he desires. The eugenists and nineteenth century German scholars would have us believe that there is a major hereditary aspect in all types of mental illness, while there are others who believe that heredity is of no importance whatever in any mental illness. The best evidence suggests that the truth is somewhere in between, and that one must not try to answer the question for mental illness in general, but for each reaction type and in many instances for each family and each individual about whom there is concern. In general, the best modern opinion is that no psychiatric disorder tends to be inherited to such a degree that the occurrence of mental illness in the offspring of the patient can be predicted. We do now know that as a group the children and relatives of those who have mental illness present more mental illness than do the children and relatives of those who have no mental illness. On the other hand, there are many psychiatric illnesses which occur in individuals from good stock and in which most of the members present no disorder whatever, while on the other hand there are valuable and useful persons in families considered by many to be poor stock and to present a good deal of mental disorder. Psychiatric morbidity in the families and relatives of those afflict-

ed with mental disorder is not great enough to permit of the conclusion that heredity is a major factor in psychiatric conditions. The British Departmental Committee on Sterilization in 1934, after reviewing all the evidence available, recommended that voluntary sterilization should be legalized in the case of (a) a person who is mentally defective or who has suffered from mental disorder; (b) a person who suffers from or is believed to be a carrier of a grave physical disability, which has been shown to be transmissible; (c) a person who is believed to be likely to transmit mental disorder or defect².

As to heredity in mental defect, the best opinions indicate that at the most one out of ten of our feeble-minded could be eliminated through widespread sterilization of all feeble-minded. Professor Punnett has calculated that it would take between two and three thousand years to reduce the incidence of all mental defect to one in a thousand by the use of widespread eugenic sterilization³.

Regarding epilepsy, the best modern information reveals that the children of epileptics are more apt to be so afflicted than the children of non-epileptics, but an epileptic would have to have thirty-six children before we could be sure that one of them would be epileptic. When both parents have epilepsy, however, this figure increases to the point of making such a marriage most inadvisable⁴.

Heredity in schizophrenia is not well established. It occurs in only 4.48 per cent of the siblings of such patients and schizophrenia rarely occurs in two or more generations in a family; it usually arises in children of non-schizophrenic parents⁵. The problem of heredity in the children of schizophrenic patients is further minimized by the fact that as a group these individuals have far fewer children than do average families. This is largely because most schizophrenics become ill when they are young adults and because they have such prepsychotic personality structures as to cause a large number of them not to be married. In the affective disorders the hereditary factor seems to be more important. When one parent is manic-depressive, as many as one-third of the children have manic-depressive illnesses, and when both parents are manic-depressive, as many as one-half of the children have such disorders⁶.

We should not at once conclude that every person who has an affective psychosis should be sterilized, because it happens that as a group those who are so afflicted probably contribute a great deal more to society than do many other groups of equal size in

Read before the Honolulu County Medical Society, October 6, 1944.

which no mental disorder occurs. In general, we must evaluate what the individual or family or society have to gain through a sterilization and also what they have to lose, and recommend sterilization only when the gain will far outweigh the possible loss.

CONSIDERATIONS OTHER THAN HEREDITY

So much for heredity. It is also necessary to consider the competence of the individual to provide for and train children in considering our attitude toward sterilization. Most persons who are mentally defective are not, in our complex society, able to properly train, manage, and guide children, and it is my opinion that many of them are eligible on this basis for sterilization. The same may apply to individual cases of mental illness and epilepsy. It may also apply to some cases of cancer, tuberculosis, leprosy, diabetes, and numerous other medical disorders.

Sterilization has also been recommended for a great variety of social and economic reasons. It would be wise for the medical profession to weigh each of these carefully and formulate some general attitude toward this activity. In my opinion, the consideration (mentioned above) of what those involved have to gain and what they have to lose should be primary. We must not forget that, in thinking of sterilization, we need to recognize the fact that a great many individuals are totally opposed to it on emotional or religious bases and that there are legalities concerned in any operation for this purpose. So far as I know, the laws in Hawaii are not clear in this direction, and it would be wise for the medical profession to assist the lawmakers in bringing about more specific and definite statutes.

In considering the possible negative effects of sterilization in any case, we should remember that the total life and experiences of most individuals and married couples can best be realized through having children. This does not mean that marriages which are basically wrong or which are failures can be made into great successes by having children. We should always consider the psychologic effect upon an individual before accepting him for sterilization even when the law permits it, and he desires it, and we think it is wise. The ability to reproduce is an extremely important capacity in giving the average individual a sense of value, of worth, of security, and of purposefulness in life. We see a considerable number of men who have been sterilized and have become

Casanovas in an effort to prove to themselves and the females they seduce that they are still men. We see other such men who become irritable, authoritative, domineering, and in general far less satisfactory individuals than they were before. Others indulge in more alcohol than previously. Still others become very suspicious of their wives, even to the point of continually accusing them of infidelity or of having an otherwise satisfactory marriage fail. I have known some men who wished to have themselves sterilized so that if their wives indulged in extra-marital sex activity, and became pregnant, they would not be able to conceal their infidelity.

Most of you know that when the problem of sterilization appears in a couple, the man almost always declines the privilege and asks that the lady be sterilized. In some instances the lady returns the compliment. Some sterilized women have later had many regrets because the marriage existing when they were sterilized has terminated, and they then find that the next husband is less easy to secure because they are unable to give him children or that their sterility causes considerable unhappiness after they remarry. It is fairly common knowledge that many individuals who have been sterilized are not particularly anxious to admit it, and they often even conceal the fact. This reaction implies that they are somewhat ashamed of it or that they have other feelings and emotions which are not positive and conclusive.

In conclusion, it is my opinion that sterilization has a place aside from strict physical indications but that a number of considerations concerning the individual—his marriage, his religion, his children, and his community—should be carefully weighed before concurring in the recommendation that he be sterilized.

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EDITORIALS

SEXUAL STERILIZATION

What are the indications which justify sexual sterilization?

Reports indicating that surgical procedures for preventing conception have been performed in relatively greater numbers in Hawaii than in mainland United States communities have brought the question forcibly to the minds of members of the medical profession in these Islands.

Do physicians in Hawaii perform such operations more often and on less weighty indications than they should? Or are mainland physicians too strict in withholding the benefits of such surgery? The answer may well be "Yes" in both instances.

The ethical, conscientious surgeon in a community where requests for sterilization operations have come to be frequently made finds himself without authoritative rules to go by, but literally swamped with personal opinions which range from one extreme to the other.

There are those who believe that sterilization operations should never be performed except to relieve an immediate threat to the life of a patient. This is a rule effective in all Catholic hospitals.

There are those who believe any man or woman has the right to decide whether he or she shall become a parent, and to demand surgical sterilization on no greater indication than his or her own desire or convenience.

There are those who recognize only so-called "medical" indications for the operation, and who say it never should be performed for "social" or "economic" reasons.

Certainly there are many who recognize medical indications but also are convinced that when a family has come to a size where any further increase gravely threatens the social and economic welfare of its mem-

bers, steps to terminate childbearing in this family are justified.

Obviously, the true and valid answer lies in a decision as to what is best, not only for the individuals concerned, but for the nation and for society in general. But neither our law-making bodies nor the medical profession have yet made such a decision.

Until such a decision is forthcoming from a proper authority, it would seem that the ethical non-Catholic doctor, remembering that his fundamental mission is to relieve suffering and prolong life, must let his own conscience be his guide.

THE HAWAII MEDICAL SERVICE ASSOCIATION

The Hawaii Medical Service Association has just submitted its annual report for the period June 1, 1943 to May 31, 1944, prepared by the auditors, Tennent and Greaney. It is a comprehensive report covering the entire financial picture of the Association together with the detail of individual accounts.

Several interesting facts are noticed in the report. Of the total income, 60.87 per cent was paid in benefits for the members to physicians and hospitals. Operating expense was reduced to 16.12 per cent. Membership on May 31, 1944 was 7,507. Family membership has increased as well as membership in industrial, teacher and social service worker groups. An adequate financial reserve has been maintained. The report shows healthy growth in membership, an increase in the amount of medical coverage extended to members and a secure base for future development.

One of the most significant demands on the Hawaii Medical Service Association's medical and hospital plan now is for increased coverage for dependents. More and more members are requesting that

family coverage be extended to their group. This follows the mainland trend, where the Michigan Medical Service as well as other plans of medical service affiliated with Blue Cross are increasing the coverage extended to dependents. It means a marked increase in membership for the plan and widened coverage for those participating. During the past year the experience of the plan with selected family groups has been successful. The further extension of the Hawaii Medical Service Association plan to include dependents in family groups is a logical move at this time to further extend coverage provided to the community.

Another trend of interest to physicians is the tendency on the part of employers to participate in carrying the expense for their employees, paying either part or all the cost of monthly dues for those who have membership. It points to an increased awareness of the need for prompt and adequate medical attention on the part of those directing business endeavor. It is a tendency which should be encouraged.

There is a growing consciousness, on the part of labor groups, of the effectiveness of the Hawaii plan. Two unions have brought their members into the Association and others are planning similar action. This follows closely the mainland pattern where both A.F. of L. and C.I.O. groups are cooperating with existing pre-payment plans for the protection of their members. This should be encouraged by the Medical Association.

From the annual report of the Hawaii Medical Service Association it is clear that our Hawaii plan has a sound foundation. It has the cooperation of the Medical Association. It has a membership that is growing in numbers and in ability to use the plan as a safeguard for better health. Members of the Medical Association should encourage new groups to join in this effort to build a voluntary pre-payment plan in Hawaii.

LEPTOSPIROSIS ON THE ISLAND OF HAWAII

The October number of *Plantation Health* is devoted entirely to an article by J. E. Alicata, Ph.D., entitled "Leptospirosis in Hawaii." This is a careful and detailed report of a study of leptospirosis "on" the Island of, rather than "in" the Territory of, Hawaii. It consists chiefly of an analysis of the relation of positive serum agglutination reactions to various etiologic factors, a similar analysis for reported clinical cases of leptospirosis, a survey of the incidence of the infection in rats and mongooses, and suggestions for the control of leptospiral infections.

The method of conducting the agglutination tests is not clearly described, but it is said to be that described by the author in a previous publication. Low titers were checked by animal protection tests and by a separate examination made at the National Institute of Health.

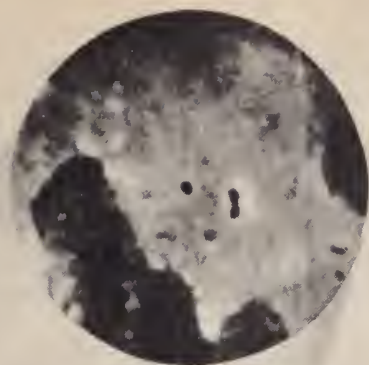
The incidence of positive reactions in a random survey was astonishingly high, varying from 4.7 per cent in 147 housewives, clerks, students and nurses, to 22.4 per cent in 156 cane cutters. The incidence was higher in rainy areas than in dry ones, a circumstance which Dr. Alicata attributes to the increased numbers of Norway rats in those regions. It is interesting that this disparity of incidence between dry and rainy areas was not noted in the study made recently by H. M. Patterson¹, at Olaa, on the same island.

For the prevention of leptospiral infections, Alicata suggests (1) physical protection of cane field workers against contact with contaminated water, (2) control of rat and mongoose population, and (3) prophylactic immunization of workers, using leptospiral antigen.

¹ Patterson, H. M.: Leptospirosis (Weil's Disease), HAWAII MED. J. 3:213 (May-June) 1944.



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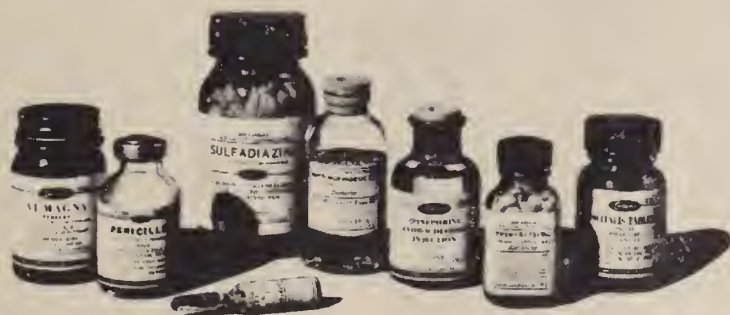
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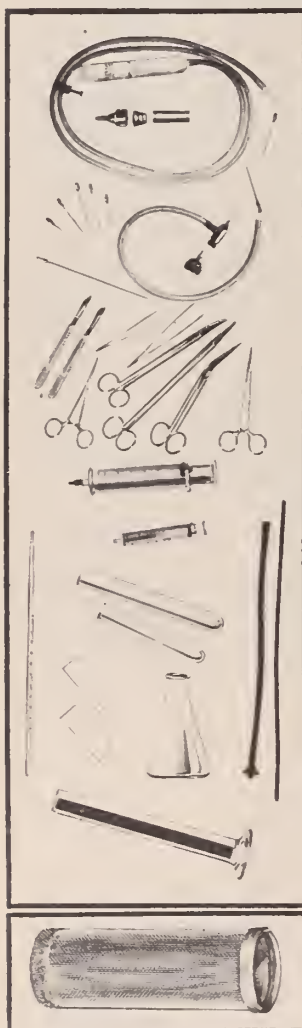
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CLINICO-PATHOLOGIC COMMENT

THE RAPID LABORATORY DIAGNOSIS OF DIPHThERIA

The laboratory diagnosis of *C. diphtheriae* infections depends upon the isolation of the causative organism. Presumptive diagnosis has been accomplished by examining suitably stained films made directly from swabs taken from suspected lesions. As a method of confirming or refuting clinical diagnosis this procedure is too time-consuming, in routine diagnostic work, and is little recommended because of its inaccuracy. The examination of stained films from direct throat swabs has, however, one advantage, not directly concerned with the diagnosis of diphtheria itself—the recognition of the spirilla and fusiform bacilli associated with Vincent's angina¹.

The eighteen- to twenty-four-hour cultivation of inoculated Loeffler's medium, with swabs taken from the nose and throat, and the examination of stained smears from "typical" colonies produced thereon, is the procedure followed in most laboratories. Recently differential blood and serum media have been employed, depending upon tellurite salts for selective action (*C. diphtheriae* produces gray or black colonies on media containing tellurite²). Disadvantages of this method are that *C. diphtheriae* often fails to develop its characteristic form (so that microscopic and macroscopic identification are uncertain) and that organisms other than *C. diphtheriae* may produce such a color change on the tellurite medium.

Rapid Diagnostic Methods

Manzullo³ described a rapid cultural method for the identification of diphtheria, using a mixture of 15 cc. meat broth with peptone, 1.5 cc. defibrinated ox blood and 1.5 cc. of a 2 per cent aqueous solution of potassium tellurite. The pharyngeal exudate was collected on a sterile cotton swab, moistened with 2 cc. of the liquid mixture, placed in a test tube, and incubated for three hours at 37 C. Small characteristic black colonies could be observed in the swab macroscopically at the end of the incubation period, and these could be identified microscopically as *C. diphtheriae*.

Tomlin⁴ and Tombleson and Campbell⁵ recommended moistening the pseudomembranes by swabbing with 2 per cent potassium tellurite. Upon examination five to ten minutes later the exudate becomes gray or black if it is diphtherial. Both authorities agree with Manzullo that the solution is stable for only one month and that it cannot be heated above 40 C. in preparation.

Tomlin concludes that negative tests obtained by his method are of value in that with great accuracy they eliminate the diagnosis of diphtheria. Such a high percentage of false positive results occurs, however, that no positive diagnosis of diphtheria should be made on a positive result alone. False positives may also be obtained by touching the tongue with the tellurite solution and by the growth of other tellurite-reacting organisms.

Tombleson and Campbell found that false negatives may also be obtained by their technic (some cases of diphtheria require more than one application of tellurite solution to produce the characteristic color change). It appears, therefore, that a negative observation affords only some presumptive evidence against diphtheria and a positive test does not establish the diagnosis. It is thus agreed that the rapid tellurite test cannot replace either clinical or cultural diagnosis⁶.

Bradhy, Lenarsky, Smith and Gaffney⁷ introduced a rapid method for the identification of the diphtheria bacilli. Sole⁸ stated that a description of this method was first given by Folger at a meeting in Carinthia 36 years earlier. Their method consisted of impregnating sterile cotton swabs with undiluted, unheated horse serum, to which no preservative has been added. (Horse serum saturated with chloroform as a preservative may be used.) The swabs are squeezed against the side of the tube to remove the excess serum. They are then gently heated over a flame to obtain surface coagulation and possibly destroy antibodies present in the serum. Nose and throat cultures are taken with the swabs, which are then placed in dry sterile tubes and incubated at 37 C. for two to four hours. They are then pressed and rolled over microscope slides, which in turn are fixed by flaming, stained, and examined microscopically.

This method has experimentally proven to be the most reliable and least criticised of the rapid diagnostic methods. Its results parallel those obtained with inoculated Loeffler's inspissated serum medium, and it affords assistance in the diagnosis of Vincent's angina.

In checking 854 specimens over a three-year period with the Loeffler method, our laboratory has found that in no instance was the Loeffler method positive and the rapid method negative. Gradwohl⁹ reported that in seventy-four cultures taken from seventy-four different diphtheria membranes, all were positive by the rapid method. On the other hand, two Loeffler's

slants inoculated from each membrane were reported positive only seventy-one times. In other words, three of the double Loeffler's cultures taken directly from the membrane were reported negative for *C. diphtheriae* but were positive by the rapid method.

Summary and Conclusions

Rapid methods for the diagnosis of diphtheria employing tellurite media can in no way take the place of the bacteriological and clinical methods of diagnosis already in use.

The undiluted-horse-serum-impregnated swab method suggested by Folger and Sole and by Bradhy, Lenarsky, Smith and Gaffney is a safe, rapid and efficient aid in the clinical diagnosis of diphtheria. In no instance was the Loeffler method positive and the rapid method negative in 854 comparative tests conducted in the Board of Health Laboratories.

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Rh BLOOD TYPES IN HAWAII

Early in 1943 the Blood Bank became interested in the subject of Rh typing. An attempt to produce our own anti-Rh serum by immunizing rabbits and guinea pigs with *Macacus rhesus* red cells was soon found impractical, if not impossible. In May 1943, literature and samples of anti-Rh serum were obtained from the Certified Blood Donors Service in Jamaica, New York. Then followed a period of testing and checking, and in June of that year the project of Rh

typing certain of our donors was undertaken. This proved so successful that in July anti-Rh serum was distributed to all the civilian hospitals with instructions for the technic of the typing test. The suggestion was made that the hospital technicians test for the Rh factor the blood of all patients who were having a second blood transfusion, and of all pregnant women. Their cooperation was secured and the results of all tests reported to the Blood Bank, where a master list was prepared of all persons tested. A mimeographed copy of this list was sent to each hospital laboratory at the end of each month.

The primary purpose of the Blood Bank was to secure a list of Rh negative donors of all four blood types. While this was being done, statistics on each patient and donor were compiled, and it soon became apparent that there had been no Rh negative persons among those of Oriental or Hawaiian-Oriental extraction. So it was decided to go into this angle more thoroughly, and for several months no Rh typing was done on Caucasian donors at the Blood Bank, emphasis being placed on Rh typing persons of Oriental, Hawaiian-Oriental, Caucasian-Oriental, Porto Rican and other mixtures. The following results were obtained:

TABLE 1. Distribution of Rh factor in 1605 persons of 22 racial groups and mixtures.

RACIAL EXTRACTION	TOTAL RH TYPED	RH POSITIVE	RH NEGATIVE	% OF NEGATIVE
Caucasian	499	431	68	13.62
Caucasian-Hawaiian	164	161	3	1.82
Caucasian-Samoan	1	1	0	0
Caucasian-Indian	14	12	2	14.3
Chinese	118	118	0	0
Chinese-Japanese	1	1	0	0
Filipino	51	51	0	0
Filipino-Chinese	2	2	0	0
Filipino-Caucasian	1	1	0	0
Hawaiian	62	62	0	0
Haw.-Chinese-Caucasian	1	0	1	100
Haw.-English-Japanese	2	2	0	0
Haw.-Filipino	7	7	0	0
Haw.-Oriental	102	102	0	0
Indian	2	2	0	0
Japanese	468	467	1*	0.21
Korean	25	25	0	0
Mexican	4	4	0	0
Negro	24	22	2	8.33
Negro-Indian	1	0	1	100
Puerto Rican	49	46	3	6.13
Puerto Rican, Spanish	7	6	1	14.28
Total	1605	1523	82	5.11

* This one Rh negative Japanese donor has been rechecked repeatedly.

The services of the Blood Bank for Rh typing of their patients were offered to all members of the Honolulu County Medical Society and some physicians have availed themselves of this. Rh typing of prospective parents is a simple, easy, inexpensive way of anticipating difficulty at the time of delivery (or sooner) caused by the Rh factor. In addition, we have cooperated with the service hospitals by furnishing them anti-Rh serum upon request. We have had instances

of mainland doctors, who have had service men's wives as patients, requesting from Service hospitals here the Rh type of the husbands of their patients. Some physicians on the outside islands have been interested in the Rh factor and to these doctors the Blood Bank has been glad to send anti-Rh serum.

Technic

The Rh typing test is a very simple one for the experienced technician. A culture tube $3 \times \frac{3}{8}$ inches is used. Two drops (.1 cc.) of the anti-Rh serum are placed in the bottom of the tube. One drop (0.05 cc.) of dilute fresh red blood cell suspension of the patient's blood is added to the serum. The red blood cell suspension should be $\frac{1}{2}$ per cent, *i.e.*, light gray or slightly pink, in appearance. All suspensions should be made from fresh blood and should be washed clear of any hemolysis. The tube is then placed in the water bath at 37 C. and left for one hour. It is then centrifuged for one minute at 500 r.p.m. and the agglutination observed. The tube is then tapped very gently. The result is then read macroscopically for clumping. Where clumping is evident the result is Rh positive. Those that seem to be negative macroscopically are then examined under microscope (low power). Those that show no clumping and the red cells evenly distributed are definitely Rh negative. The serum which the Blood Bank uses is that known as anti-Rh standard (85 per cent positive). With the aid, however, of three varieties of anti-Rh agglutinins, five sorts of Rh agglutinogens can be demonstrated, which in combination determine eight types of human blood in connection with the Rh factor. However, the Blood Bank has not yet found it necessary to use other than the standard anti-Rh serum.

Quite recently the Blood Bank was able to procure

an Rh negative donor of the proper type for a patient with erythroblastosis fetalis at one of the hospitals. Four donations of 50 cc. each were taken from the donor and given to the baby over a period of forty-eight hours. The patient had a complete and uneventful recovery. However, the use of Rh negative donors is not confined to cases of erythroblastosis fetalis but is useful in preventing hemolytic reactions in other (Rh negative) patients having repeated transfusions. We have had cases of this type at the various hospitals where a predetermined Rh factor has been valuable. It is many months since a hemolytic reaction has been reported to the Blood Bank from any of the hospitals using Blood Bank blood.

Summary

The Honolulu Blood Plasma Bank has been Rh typing donors since July 1943 using standard anti Rh serum.

A list of Rh negative donors of all four blood types has been compiled.

Anti-Rh serum has been furnished all civilian hospitals in Honolulu and also service hospitals upon request.

Of 611 Orientals, only one was found to be Rh negative, or .164 per cent; 102 Hawaiian-Orientals were all found to be Rh positive; of 164 Caucasian-Hawaiian, 1.82 per cent were found to be Rh negative.

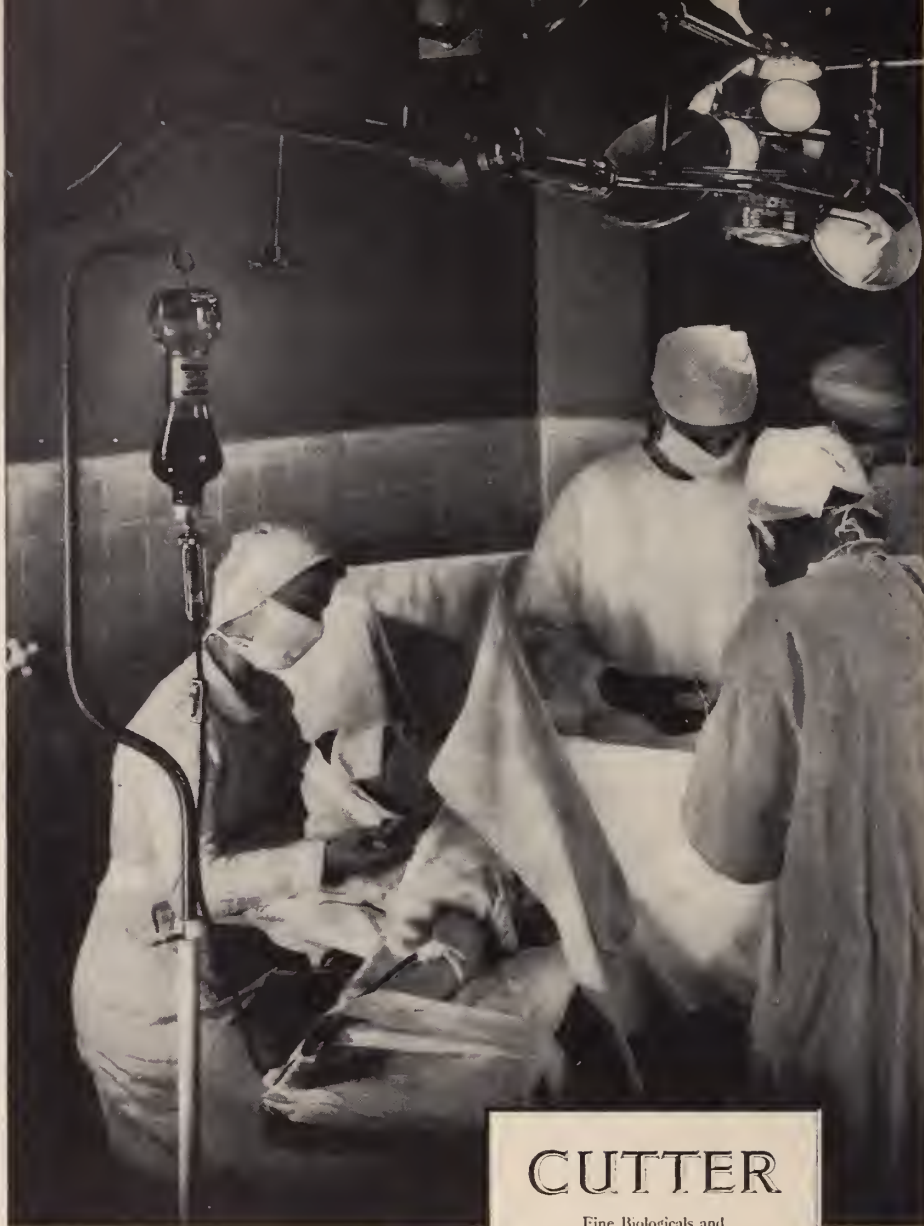
An Rh determination is valuable for patients who are pregnant, post partum cases and those having repeated transfusions.

F. J. PINKERTON, M.D., *Director*,
Honolulu Peacetime Blood Plasma Bank.



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NEUROPSYCHIATRIC COMMENT

EMOTIONAL FACTORS IN ORGANIC DISEASE

Psychiatry is that branch of medicine which deals with the etiology and dynamics of human behavior. It is, therefore, a study of the individual as a whole integrated organism behaving in an environment. This environment is composed of both the external world about the individual and the internal world within the individual. The individual is equipped to make adjustments and adaptations as the need or the desires for such changes arise.

It has been well established that emotional stimuli can cause changes in any organ in the body no less effectively than bacteria, toxins, or physical agents. The work of Pavlov and Cannon demonstrated beyond doubt that emotional factors—fear, rage, excitement, unconscious hostility, et cetera—produce alteration in the tension of muscles, both smooth and striated, and changes in secretions of glands. It is not difficult to imagine that long continued motor and secretory changes will eventually result in disturbance of functions.

Emotions operating through the sympathetic, parasympathetic, and endocrine systems can produce such far reaching effects as alterations of the blood sugar, clotting time, and viscosity of the blood. No study of an obscure organic lesion is complete without a thorough investigation of the emotional factors. The list of diseases in which the psychic component may predominate is a long one, extending from the trivial cold to such serious conditions as coronary thrombosis. Sometimes the emotional tension is apparent but more often it must be sought out by a study of environmental and personal situations.

The treatment of cardiovascular and gastrointestinal disease is now incomplete unless a thorough search is made for emotional etiologic factors. The resistance of gastric ulcer to medical management is often due to unrecognized hostility and resentment to a situation. Cushing demonstrated that induced irritation of the hypothalamus produced alterations in the secretions and motility of the stomach thus preparing the soil for the development of an organic lesion.

Other systems and organs are not immune. More and more attention should be paid to psychic influences in asthma, urticaria, and many related conditions. Allergy alone is not a satisfactory explanation.

From the Territorial Hospital, Department of Institutions, Thomas B. Vance, director.

It is not intended to cover the entire field of psychosomatic disorders in this paper. The potentialities are so vast that only a few reports have been cited. How many physicians, for instance, consider the psychic component in the management of obesity? Usually the doctor thinks of constitutional, hereditary, or endocrine factors, but rarely of the psychogenic. Gluttony with its resulting obesity is not infrequently due to the unsatisfied hunger for love and attention. This is not mere ridiculous assumption. It is a fact based on demonstrable evidence. At the other extreme, anorexia nervosa, as the name implies, has been regarded as a psychic disturbance that no amount of tonics will relieve.

We should think of psychiatry, as we do the organic fields, as consisting of something real, something that one can hold in one's hand. As we grow in organic structure we learn to creep and then to walk. We learn to talk. We learn to do many other skilled activities. As we develop the ability to handle concrete material we also develop the ability to handle abstract material. Our ideas and ways of thinking at two years of age are different from those at ten and those at twenty. The thinking processes, or mental mechanisms, are real things. We use them in our everyday lives as we use our knives and forks. We rationalize, we project, we suppress as easily as we eat our bread and butter. These mental mechanisms are tools of our personalities. They are like our arms and legs. They take us to pleasant thoughts and away from unpleasant; similarly, we walk toward the objects which please us and away from those that do not.

In spite of the fact that many of the conflicts which cause difficulty are situated deep in the unconscious and are, therefore, difficult to attack therapeutically, there is much that can be done to help the patient to adjust and to solve his problems by using them at levels that are available in the conscious field. One should not forget that delving too deeply into the personality sometimes brings up material that will make the patient much worse. As the surgeon who removes an appendix takes precaution not to injure the nearby gut, so, in the field of emotions, care is necessary.

Before going into the field of therapy, one should first mention those symptoms which must be considered in the differential diagnosis of emotional maladjustment. These conditions should not be diagnosed by the process of elimination. The patient complains of pain that is much more severe than the

existing abnormality would seem to justify. He is tense, anxious, and apprehensive. He has no appetite, cannot sleep, and cannot concentrate. In general he has lost interest in living. Frequently the complaints are so numerous that no single organ system can be considered to be the source of the complaint. This is to be expected, for one does not become mal-adjusted in part—it is the whole of the personality that is affected.

Worry is an example to the point. A situation arises in which the individual would like to take direct action. However, there are factors in the situation which prevent him from doing so. The energy thus aroused seeks some way to express itself and the individual does the only thing that is allowed him—namely, thinking. His thoughts are unpleasant because the situation is unpleasant. He becomes anxious, apprehensive, and irritable. His facial expression shows his mental tension and his fear. Accompanying this unpleasant state of mind is an unpleasant state of body. He cannot sleep, he has no appetite, he complains of all manner of somatic difficulties. He may even consult a physician because of the somatic pain. Worry is a total response, and, therefore, the state of mind is accompanied by involvement of many organ systems. Obviously, it would be foolish to direct therapy to any physical symptom, though it appears to be the chief complaint.

In handling the emotional parts of the patient's problem it becomes the main duty of the physician to lead the patient to an understanding of his symptoms in terms of the emotional factors which may have been active in producing them.

It is also necessary for the physician to point out that emotional illnesses are real illnesses and not just the result of a weak will or an overactive imagination. Many patients are unable to admit that they could have an emotional problem because, in their minds, such a condition is unacceptable to their ideas of will power.

By placing too much emphasis upon the organic nature of the illness, one can fix the illness to the particular organ involved and cause the patient much future discomfort. Let us illustrate: A student came into my office complaining of severe pain in her stomach and a mild case of hysteria. Examination of the abdomen was negative. White blood cell count was normal. After a short period of time she said, "Doctor, could it be that this is nervousness? You know, I am studying Psychology . . . I wonder. We have been having trouble in our sorority house. The girl who has the position which I should have got has been behaving very thoughtlessly toward a freshman of whom I am very fond. Could it be that I am jealous?"

We discussed the element of jealousy and the patient left the office smiling and feeling very com-

fortable. This was a simple case. Very easily, I might have asked her to tell me what she had eaten for her noon meal and, by suggesting that perhaps some particular food was the cause of the pain, might have led her to the conclusion that that particular food was the cause of the illness. Thus in the future she would associate pain with that food and condition herself to avoid it.

In this instance the psychological problem was very easy to find and responsive to therapy. Had too much emphasis been placed upon the stomach complaint and no time given to her to tell her story, she might have forgot about the jealousy in order to concentrate upon the abdominal pain.

It is sometimes easy to make people into invalids and it is very difficult to undo the damage once they have become adjusted to that life. We have all been guilty of this sort of thing at some time or other in our professional careers. In our manner of speaking we may convey to the patient the idea that, perhaps, he does have some serious defect. For example, in certain types of cardiac cases, the patient becomes alarmed and immediately restricts his activities or goes to bed completely. When planning a health routine for such patients it is necessary to remember that activity is essential for human happiness. The program should include physical activity, social contacts, and body hygiene. The joy of accomplishing things should not be taken from him and replaced with the boredom of twenty-four hours in bed. It is indeed unfortunate that the idea of complete bed rest was able to get such a strong foot-hold upon our medical thinking. To let a patient lie in bed with nothing but four walls to look at and nothing to do but to think of his troubles is the very worst kind of psychotherapy. It is unfortunate that when left to himself man is likely to spend his time thinking only troublesome thoughts. Thus, after a period of bed rest, he arises much the worse for his experience. In the August 14, 1944, issue of the *Journal of the American Medical Association* appeared many articles pointing out that rest was being used in excess of its usefulness and that even in organic illness a patient is definitely benefited by getting out of bed and into activity that he can do and likes to do.

In handling emotional problems one must not forget about the factor of time. As in other benign conditions, many of the psychological problems tend to improve if given the time that is necessary for certain of the emotional situations to change. For example, for brief periods in one's life, grief will greatly influence one's thinking and physiology. Gradually one becomes adjusted and returns to one's normal ways of living. In such cases the doctor acts to help the individual over the trying period by being careful to recognize the effect of the emotion and by treating the associated somatic complaints as of minor importance, knowing that when the emotion is adjusted, the complaints will disappear.

When one overlooks the factor of emotion, one will notice that the patient does not respond to therapy for any length of time. This type of patient is likely to go from one doctor to another. Treating the physical manifestations of an emotional illness tends to fix the illness in that particular organ. The patient begins to feel that he has a very serious illness because the doctor cannot cure him. He comes to look upon his illness as a great thing for he can brag about how much he suffers and how no doctor can help him. The more the emotional factors are pushed into the background, the more firmly established and resistant to therapy the physical illness becomes.

The need for understanding the problems of individuals is great. The physician should consider the inter-reaction of the patient and his environment. The problem is a dynamic one, for both the patient and the environment are constantly changing as each exerts an influence upon the other. As one teaches the patient to recognize these ever-changing factors in his life and their effects upon him, he learns to integrate the various parts of the environment and to know when the problems are emotional and, thus, learns how to handle them.

C. L. MELLER, M.D.

MENTAL HEALTH

As the Hawaii Territorial Society for Mental Hygiene enters its third year of existence, plans are announced for an extensive membership campaign, according to O. W. Robinson, president. The society has grown from the original 70 charter members to a list of over 400 persons throughout the Territory.

The organization represents a medium for bringing together lay and professional persons who are interested in "Better Mental Health for Hawaii." Basic to its objectives is the recognition of essential inter-play and fusion of direction among the various

technical fields that play a part in preserving mental health—psychiatry, psychology, education, medicine, nursing and social work.

"Only by constantly increasing our membership," Mr. Robinson points out, "can we hope to achieve the strength and unity needed to effect full mobilization of the community's resources to meet the growing pressures of the war period and to face with courage the complex problems of personal adjustment and human relationships which will exist during the transition into the post-war era."

The society also aims to serve as a channel for the dissemination of reliable information concerning good mental health and interpretation of some of the forces which contribute not only to minor maladjustments but often to serious nervous and mental disorders.

While the society is fairly young, interest in the mental health movement in the Territory goes back 20 years when the Legislature created the Psychological Clinic at the University of Hawaii. Greater interest was generated as a result of the survey made in 1937 by Dr. F. G. Ebaugh, professor of psychiatry at the University of Colorado Medical School. The Mental Hygiene Clinic, which was created in 1938 under the Chamber's sponsorship, became the Bureau of Mental Hygiene of the Territorial Board of Health following action taken at the next session of the Legislature.

Prior to the outbreak of the war, the Psychiatric Committee of the Hawaii Territorial Medical Association, in cooperation with the Honolulu Council of Social Agencies, had formulated plans which included organization of a Territorial Society of Mental Hygiene. While the war disrupted such plans for several months, in August 1942 these joint efforts bore fruit.

Annual renewal of dues for current members in December, Mr. Robinson said, will be followed by a general membership campaign during January. Further information may be secured from the society's office in the Mabel Smyth Memorial Building, telephone 66469.

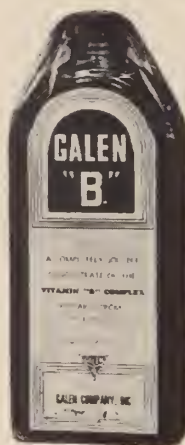




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EMERGENCY MEDICAL SERVICES

RESPONSE TO AIR RAID WARNINGS

The recent air raid alarm revealed that large numbers of medical personnel are confused regarding their duties in the event of air raids. On April 24, 1944, a mimeographed circular was published to all concerned which gave in detail the plans for medical care of casualties due to enemy action or due to other major disaster not caused by enemy action. Copies of this are available on request. *All doctors on hospital and mobile teams should report for duty when the siren sounds.* This plan is still in effect but it is thought justifiable to publish changes in plans necessitated by discontinuing Sacred Hearts Hospital.

The reason for having Plan A and Plan B was perhaps not made clear in our memorandum of April 24. The reason is that our air raid sirens are the signal for alerting all medical and other O.C.D. personnel *in the event of enemy action only.* If there should be, for example, a large fire or an explosion which injured so many people that the normal facilities of the city could not care for them adequately, it might be necessary to alert O.C.D. personnel *without* the siren signal. This is known as Plan B.

The closing of Sacred Hearts Hospital, and the return of the building to the Church for its normal purpose of a schoolhouse, has left the entire staff of volunteers at Sacred Hearts Hospital without assignment. In order to provide emergency hospital facilities

ties to care for a large number of casualties, the former Poliomyelitis Hospital (Shriners' Annex), has been rearranged, in accordance with the original plan, as an emergency casualty hospital. The Hospital in Manoa Valley Japanese School has also been continued. It is planned that the staff formerly assigned to Sacred Hearts Hospital, doctors, nurses, and other volunteers, would be assigned to these two hospitals in the event of catastrophe. In the near future, a muster of the personnel will be arranged so that all concerned may see the hospital, inspect its facilities and become sufficiently familiar with it that in the event of need they could open the hospital and operate it. In addition, this group of persons would be available as a pool from which other hospitals might draw, provided it was not necessary to open the Shriners' Annex.

While our security has tremendously increased in the past two years, it is still believed possible for enemy action to occur and casualties to be caused thereby. Furthermore, it is always possible that explosions or fires—particularly in the waterfront area—might suddenly create a tremendous number of casualties to be cared for. For this reason, all concerned are urged to maintain their connection with the Office of Civilian Defense in order that, should some such catastrophe occur, casualties would be cared for efficiently and promptly.

H. L. ARNOLD, M.D.
Territorial Medical Director



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HOSPITAL NEEDS

COMMENTS ON ADMIRAL JOHNSON'S SURVEY OF HONOLULU HOSPITALS

This statement on the hospital bed requirements of Honolulu has been prepared at the request of the Health Committee of the Chamber of Commerce and is in the nature of comment upon the survey of Honolulu hospitals prepared by Admiral Lucius W. Johnson, Medical Corps, United States Navy. In view of the completeness, and thoroughness of Admiral Johnson's report, no attempt will be made to duplicate the material presented so ably by him. It is obvious that Admiral Johnson has conducted an extensive and far-seeing study and the observations which I have to make are, by and large, in the nature of confirmation of the conditions found by Admiral Johnson, and his recommendations.

General Hospital Bed Distribution

Table 1 portrays the distribution of hospital beds available for current use in the City of Honolulu. In certain instances the bed capacity as reported in

TABLE 1. *Bed Capacity Honolulu Hospitals, April 1944*

	GENERAL MEDICAL AND SURGICAL	OBSTETRICAL	CONTAGIOUS	PEDIATRIC	TUBERCULOSIS	MENTAL	CHRONIC	TOTAL
Children's			15*	60*				75
Kapiolani		50 14*						64
Kuakini†	124*	17	40*	18			30‡	199
St. Francis	69	31*						100
Queen's	216	42	30*			24		312
Leahi					236 251*			487
Maluhia							140*	140
Kaneohe†						926		926
Total	409	154	85	78	487	950	170	2303

† Bed distribution calculated as after Army release of currently used space.

* Temporary or sub-standard construction.

‡ Not part of General Hospital.

Table 1 is lower than the beds actually being operated by the hospitals, and in other instances the bed capacity reported is the same as the number of beds being currently used. For instance, at Kapiolani Hospital, while the rated capacity of the institution should be no more than 50, the use of 64 beds has been made possible by temporary arrangements which, while not ideal, should continue to be used and can continue to be used for an additional temporary period without undue hardship or dangerous crowding.

When considering the future bed needs of Honolulu, it is obvious that because of the differences in climate, housing, industrial practices, and population distribution, the generally accepted standards calculated for the Mainland may not be directly applicable. It would therefore appear to be worthwhile to analyze the past history of hospitalization in Honolulu so that we may gain an insight into the projected needs of the community.

Presented herewith are tables showing, for the period 1934 through 1943, the bed capacity, the average per cent occupancy, and other pertinent details concerning the operation of the five major hospitals in Honolulu. This material is summarized in Tables 2 and 3, presenting respectively the Average Census and the Bed Capacity of the Honolulu hospitals during the last ten years. Table 4 presents the number of beds per thousand population and the percentage of bed occupancy in parallel columns. It may be seen that during the period 1934 to 1939, at which time we must assume that more or less normal conditions existed in Honolulu, while the total beds per thousand population averaged about 3.3, the average percentage of occupancy of hospital beds was 64.4. During the period 1940 to 1943, when the hospital beds per thousand fell to a level of 2.77, hospital bed occupancy increased to 100 per cent.

It is generally accepted that hospitals cannot operate without dangerous overcrowding of at least certain sections of the hospitals, if the general bed occupancy

TABLE 2. *Average Census Honolulu Hospitals, 1934-1943*

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
The Queen's	151	170	180	199	220	216	238	266	269	269
St. Francis	37	50	51	60	50	51	58	62	78	91
Kapiolani	27	28	31	32	35	39	39	56	60	61
Kuakini	53	30	61	76	84	91	107	125	116	126
Children's	39	41	45	48	50	46	54	62	52	61
Sacred Hearts Emergency									24	47
TOTAL HONOLULU	307	319	368	415	449	443	496	571	599	655

The ideas and opinions here expressed are the private views of the writer. They are not to be regarded as the official policy of any government department.

TABLE 4. *Beds per 1000 Population and Percentage of General Hospital Beds, Honolulu 1934-1943*

	ESTIMATED* POPULATION	GENERAL HOSPITAL BEDS	AVERAGE CENSUS	BEDS/1000	PER CENT OCCUPANCY
1934.....	168,400	559	307	3.33	54.9
1935.....	172,900	559	319	3.23	57.0
1936.....	177,300	605	368	3.42	60.8
1937.....	181,800	605	415	3.32	68.6
1938.....	186,200	619	449	3.33	72.5
1939.....	190,700	625	443	3.27	70.9
1940.....	195,100	625	496	3.20	79.2
1941.....	222,200	621	571	2.80	92.0
1942.....	229,000	641	599	2.80	93.4
1943.....	235,800	653	655	2.77	100.0
On Completion Presently Planned Projects	260,000	909	?	3.50	?

* Total Honolulu plus 20 per cent population rural Oahu as probable potential "hospital demand population."

is much over 80 per cent. At the same time, hospitals cannot operate economically if the percentage of bed occupancy is materially below 60. In planning a hospital expansion program, therefore, these factors should be kept in mind, so that the hospital bed occupancy of the future community falls within these

projects for general hospital beds, unless a change in hospital habits of the community can be shown.

Has there been a change in demand for hospital beds during the last ten years? During the period 1934 to 1939, in spite of the fact that the beds per thousand population were comparatively stable at 3.3 per thousand, the percentage of bed occupancy increased from 55 to 71 per cent. This would indicate a trend toward an increase in demand for hospitalization in a stable community, probably based upon better health education, better financial conditions, a rising standard of medical care, and other factors. In looking for a specific cause, the most obvious possibility is that an increasing proportion of the population was able to pay for hospitalization. An attempt was therefore made to ascertain for each year what proportion of patients admitted to the Honolulu hospitals were able to pay their own hospital bills, and the proportion who were admitted on a reduced fee or charity basis, so that an estimate could be made of the availability of hospitalization to the medically indigent. No basic data were available which would shed any light on this problem.

TABLE 3. *Rated Capacity Honolulu Hospitals 1934-1943 and Projected Capacity With Presently Planned Additions*

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	WITH PRES- ENTLY PLANNED ADDITIONS
The Queen's	264	254	300	300	284	284	284	280	300	312	412
St. Francis	60	60	60	60	60	60	60	60	60	60	160
Kapiolani	50	50	50	50	50	50	50	50	50	50	106
Kuakini	120	120	120	120	150	156	156	156	156	156	156
Children's	75	75	75	75	75	75	75	75	75	75	75
TOTAL HONOLULU	559	559	605	605	619	625	625	621	641	653	909

limits. Since during the period 1934 to 1939 the hospital bed occupancy was well within the range quoted, we should be reasonably sure that there have been stable changes in the habits of the community toward demanding an increasing number of hospital beds per thousand before these increased beds are built.

The addition of 250 beds which are now being constructed in Honolulu will furnish 4.5 beds per thousand for a population increase of 60,000 which, in effect, means that the actual population increase has had hospital bed facilities provided more adequately than the facilities which were available for the normal peace-time population of Honolulu, during which time the hospital bed occupancy never exceeded 80 per cent. With the additional 250 beds there will be approximately 909 beds available in the Honolulu general hospitals and with a projected population of 260,000 in the metropolitan area, there will be 3.5 beds available per thousand population. This is more beds than have been available at any time since 1934, and while it is grossly inadequate as judged by all Mainland standards, it would appear justifiable to wait until these beds are actually in operation before beginning construction on further major additional

In our society, we have come to recognize that certain standards of medical and hospital care should be available to our people regardless of their ability to pay for such services. Could it be that the history of Honolulu in 1934-1939, when 3.3 beds per thousand population apparently adequately served the community, indicated that the "medically indigent" were not obtaining hospitalization? Such meager information as was available would tend to indicate that this might be true, and that if hospitalization had been available solely on a basis of need, hospital facilities would even then have been inadequate.

The entire subject of hospitalization of medical indigents deserves considerable study. This study should include an analysis of patients entering all the Honolulu hospitals over a comparatively long period of time to determine the actual proportion of medically indigent patients who obtain hospital treatment. Parallel with this, a study should be undertaken to determine the income distribution in the community over the same period of time. I hold no brief for the development of a City and County Hospital in Honolulu. However, in its absence, there should be adequate public funds freely available for the reimburse-

ment of private hospitals for the hospitalization of the medically indigent. The social investigation and certification procedure of indigency necessary to obtain hospitalization should be critically reviewed and policies established which will assure a minimum of delay and sufficiently liberal standards of medical indigency so that hospitalization does in reality become equally available to this group of the population.

If it is determined that there is a deficiency in hospitalization of the medically indigent, and a mechanism is set up to assure freely available hospital service, plans should be made to develop the necessary hospital beds. The fact that only \$70,000 was spent in 1943 for the hospitalization of the medically indigent may indicate one of two things: first, that during present boom times medical indigency is at a very low ebb; or second, that only a small proportion of the medically indigent are being hospitalized. It is probable that both factors are at work.

Other factors are probably at work to cause an increase in demand for hospital beds. In the past, certain population groups have clung to the standards of their homeland, where hospitalization is not customary. With the war, and the pressures brought to bear, these influences are likely to carry less and less weight—particularly with the younger groups, where an increased demand for hospitalization may be anticipated.

During the present emergency the civil population distribution is abnormal, with a high proportion of young adult males—a group which recognizedly does not require hospitalization at the same rate as a normal population group. While it is probable that this influence will be present for many years, the re-establishment of normal travel will bring about a rather sudden swing toward the normal.

All of these factors would appear to be influences which would increase the demand for hospital beds in the future. Admiral Johnson has recommended the construction of 694 general hospital beds in the immediate future—the 254 now under construction, plus 440 to be planned. Such construction would nearly double the number of general hospital beds in the community, and while it is entirely possible that a demand will develop for this number of beds, there are so many intangible factors involved that I would recommend the immediate construction of no more than the presently planned 250 beds, with an additional 50 beds for children, to be included in a new 125 bed Children's Hospital and an addition of 50 general beds at Kuakini Hospital. This program would add 379 beds to the present hospital capacities and would bring the beds per thousand in 1945 to 4.0 if the population in that year should reach the projected 260,000 figure. In view of the past history of the community, these additions will certainly relieve the present hospital crowding and give the community ample opportunity to program future beds as

the need becomes apparent. In this connection, Admiral Johnson's recommendations concerning a permanent Hospital Committee and Hospital Council are excellent and to be strongly recommended.

Specialized Hospital Beds

With regard to specialized bed needs of the community, there are very obvious and gross deficiencies.

Mental Institutions. The present Territorial Hospital, situated at Kaneohe, is operating at about 115 per cent of its normal capacity. With the joint occupancy by the Army, crowding is further increased and operation is made more difficult. It is understood that the present Lanham Act application for 218 additional beds has been refused by the Federal Works Agency as not meeting the criteria for construction under presently available Federal grants. In spite of this fact, expansion of the institution is urgently needed and should proceed immediately to provide at least 350 additional beds to take care of the present overcrowding and to provide reasonable expansion for the next five years.

In the development of the institution at Kaneohe, adequate treatment facilities should be provided to continue the improvement of standards of treatment for patients committed to that institution.

Because of its location and the character of its facilities, the Territorial Hospital cannot meet the total community need for mental beds. Most of the patients from the higher economic groups will refuse treatment at the "Pupule house" but would readily enter a general hospital. Then, too, for a well rounded mental hygiene program, out-patient facilities are essential and these should be in conjunction with a hospital giving modern psychiatric therapy. Many patients can be carried effectively in a comparatively normal existence with out-patient care and occasional short periods of hospitalization. Moreover, in the case of many types of mental illness, frequent visits from friends or relatives are essential.

For all of these reasons, it is essential that psychiatric beds and a clinic be available in Honolulu. To meet this acute need, the present psychiatric beds at Queen's Hospital for the treatment of those acutely deranged and having favorable prognosis is grossly inadequate and should be expanded immediately to provide a minimum of 75 beds with necessary appurtenances and out-patient facilities for the treatment of these types of patients.

Tuberculosis. The tuberculosis hospital bed situation in the City and County of Honolulu is acute, as evidenced by the fact that Leahi Hospital is operating at 100 per cent capacity in buildings which are inadequate, and at the same time, more than 180 tuberculosis patients are being hospitalized in temporary hospitals and cared for by the Army. Of the existing 487 beds, 250 are in frame structures which are gross-

CHART I. Capacity and services Honolulu Hospitals, 1934-1943

	BEDS	EMERGENCY BEDS	INPATIENTS	ADMISSIONS	DISCHARGES	TOTAL PATIENT DAYS	PT. DAYS PER PATIENT	AVERAGE NO. OF PATIENTS	AVERAGE % OCCUPANCY	NUMBER OF BIRTHS	NUMBER OF SURGICAL OPERATIONS	NUMBER OF LABORATORY EXAMINATIONS	NUMBER OF X-RAYS EXAMINATIONS
<i>The Queen's Hospital</i>													
1934.....	264	....	18	6127	7014	55225	8.7	151	57.2	591	2072	27809	3600
1935.....	254	....	18	6763	7670	61954	9.0	170	65.2	629	3049	20541	3631
1936.....	300	....	20	7402	8098	65892	8.6	180	60.0	695	3250	33233	3997
1937.....	300	....	25	7940	8688	72766	8.9	199	66.3	770	3419	37456	5176
1938.....	284	....	25	8528	9423	80168	9.0	220	77.5	881	3804	54374	5983
1939.....	284	....	30	9102	10276	76969	8.4	216	76.1	1199	4317	57738	6908
1940.....	284	....	36	10380	11740	87279	8.2	238	83.8	1428	4445	65596	7887
1941.....	280	....	40	11175	12654	97212	8.6	266	95.0	1485	5159	70844	7814
1942.....	300	....	40	11623	13695	98368	8.3	269	89.7	1750	5192	51680	6184
1943.....	312	....	46	11430	13156	98086	8.2	269	86.2	1978	5363	45077	5242
<i>St. Francis Hospital</i>													
1934.....	60	....	10	1245	.....	.....	.....	37	61.6	129	.....	.....	.....
1935.....	60	....	10	1363	.....	.....	.....	50	83.4	120	.....	.....	.....
1936.....	60	5	10	1745	.....	.....	.....	51	85.0	164	.....	.....	.....
1937.....	60	5	10	2216	.....	.....	.....	60	100.0	207	.....	.....	.....
1938.....	60	5	10	2430	.....	.....	.....	50	83.4	361	.....	.....	.....
1939.....	60	5	10	2551	.....	.....	.....	51	85.0	375	.....	.....	.....
1940.....	60	9	12	2645	.....	.....	.....	58	96.7	394	.....	.....	.....
1941.....	60	9	12	2717	.....	22629	6.0	62.0	103.3	452	1580	.....	.....
1942.....	60	21	12	3773	.....	28605	8.5	78.3	123.5	528	2442	.....	.....
1943.....	60	41	35	4305	.....	33149	7.0	90.8	156.2	909	2853	.....	1394
<i>Kuakini (Japanese) Hospital</i>													
1934.....	120	....	5	1928	1806	19332	10.0	52.9	44.1	43	.....	14604	377
1935.....	120	....	5	1142	1089	10955	9.5	30.0	25.0	52	.....	15323	440
1936.....	120	....	5	2415	2293	22270	9.2	61.0	50.8	.....	.....	15511	596
1937.....	120	....	5	2882	2747	27625	9.5	75.6	63.0	80	.....	15737	765
1938.....	150	....	8	3034	2908	30742	10.1	84.2	56.2	.....	.....	16640	922
1939.....	156	....	10	3302	3131	33106	10.0	90.7	58.2	165	.....	17049	980
1940.....	156	....	20	4143	3980	39068	9.6	106.7	68.4	275	2017	17552	1119
1941.....	156	....	20	4800	4662	45632	9.5	125.0	80.2	398	2242	17916	2900
1942.....	156	25	20/8	5064	4899	42277	8.3	115.8	79.2	641	238	17947	3115
1943.....	156	25	20/8	6068	6102	46165	7.8	126.3	81.0	784	2526	18616	4705
<i>Kapiolani Hospital</i>													
1934.....	50	....	30	1363	.....	9984	7.3	27.4	54.8	637	497	.....	.....
1935.....	50	....	30	1440	.....	10250	7.1	28.1	56.2	687	.....	.....	.....
1936.....	50	....	30	1560	.....	11183	7.2	30.5	61.0	750	368	.....	.....
1937.....	50	....	30	1655	.....	11884	7.2	32.5	65.0	754	567	.....	.....
1938.....	50	....	30	1583	.....	12786	8.1	35.0	70.0	820	500	.....	.....
1939.....	50	....	30	1766	.....	14104	8.0	38.6	77.2	1052	624	.....	.....
1940.....	50	....	30	1876	.....	14144	7.5	38.6	77.2	1158	534	.....	.....
1941.....	50	....	30	2502	.....	20376	8.1	55.8	111.6	1761	633	.....	.....
1942.....	50	....	50	2751	.....	21741	7.9	59.6	119.2	2085	438	.....	.....
1943.....	50	14	70	2929	.....	22260	7.6	61.0	122.0	2552	163	.....	.....
<i>Children's Hospital</i>													
1934.....	75	....	....	1587	1575	14215	8.9	38.9	51.8	.....	.....	.....	.....
1935.....	75	....	....	2430	2311	14981	6.2	41.1	54.8	.....	530	4507	670
1936.....	75	....	....	2278	2148	16477	7.2	45.0	60.0	.....	877	5767	584
1937.....	75	....	....	2151	2121	17520	8.1	48.0	64.0	.....	1015	7951	643
1938.....	75	....	....	2203	2139	18304	8.3	50.1	66.8	.....	1107	9281	847
1939.....	75	....	....	2287	2258	16914	7.4	46.3	61.7	.....	1221	9081	1108
1940.....	75	....	....	2712	2687	19542	7.2	53.5	71.3	.....	1700	16350	1151
1941.....	75	17	....	3353	3287	22761	6.8	62.2	82.9	.....	1285	20470	1076
1942.....	75	18	....	3343	3190	19022	5.7	52.1	69.5	.....	1304	20050	1221
1943.....	75	18	....	3343	3331	22282	6.6	61.1	81.5	.....	1100	19043	1445

ly inadequate. A proposal now under consideration by the Board of Directors of Leahi Hospital to add 439 beds to the institution should receive immediate and favorable consideration by the community. With the proposed addition, Leahi Home will have 926 beds available and with the current patient load, plus the patients hospitalized by other agencies, and those awaiting hospitalization, the institution can be almost immediately filled. At the same time, however, because of the increased efficiency of the tuberculosis case-finding program, cases of tuberculosis should be discovered in earlier and earlier stages, under which circumstances the time of hospitalization per case will

decline and the number of new cases should also decline. It is entirely possible that, in the long run, 926 beds will be unnecessary. The projected plan of Leahi Hospital will include 300 beds in wooden temporary structures which will have outlived their usefulness by the time the contemplated reduction in the incidence of tuberculosis is effected. In effect, the present plan calls for the establishment of a 626 bed modern institution with the use of existing and new frame buildings to temporarily build the capacity up to 926. This proposed expansion of Leahi Home is of paramount importance and should proceed immediately.

General Comment

It is needless to say that I concur with the recommendations concerning Waimano Home and Maluhia Home. However, I would doubt the advisability of the combination of a convalescent nursing home with a home for the indigent disabled. If a convalescent nursing home in Honolulu is to accomplish the end of relieving the hospital situation in the established hospitals, facilities must be available both for the indigent and pay patients. A newly developed Maluhia Home would satisfy the demand so far as indigent patients are concerned. However, there are many hospital beds occupied by individuals well able to pay for bed care who could adequately be taken care of in a nursing home if such an institution had pleasant surroundings and a homelike atmosphere. The stigma attached to "going to the County Home" would, I am afraid, automatically exclude the class of patients for whom such an institution would be designed.

The rather peculiar situation at Kuakini Hospital and Home deserves special mention. This hospital up to the time of the "blitz" was administered and operated by a benevolent Japanese society and apparently served as one center of indoctrination and philosophy from homeland Japan. It was operated by Japanese for Japanese. Immediately after the "blitz" the hospital passed into the hands of a new administration who plan to operate it as an American hospital for Americans. The administration is taking immediate steps to make the hospital acceptable for certification by the American College of Surgeons and to bring their school of nursing up to the highest possible standard so that graduates will have training comparable to that available in the best schools of nursing. The development of this institution to the point where it is generally accepted as an integral part of the hospital system of the City presents a challenge to the entire community. Every community support should be given this hospital so that these ends may be accomplished.

Children's Hospital

With the exception of a few pediatric beds which will be available at Kuakini Hospital, Honolulu depends upon Kapiolani Children's Hospital for pedi-

atric beds. As soon as the Army ceases to occupy certain buildings at Kuakini, relatively adequate physical facilities will be available for their pediatric department. The Children's Hospital, however, is grossly inadequate from all standpoints. The present buildings should be abandoned and totally replaced by a modern children's hospital of 100 to 125 beds. This is probably the second most urgent item of hospital construction in Honolulu and should be immediately undertaken. In the meantime, the management of Children's Hospital should lay plans for a complete reorganization of the administration of the Children's Hospital, the key to which is the immediate employment of a well-qualified hospital administrator. Since practically all the pediatric beds in the community are at Children's Hospital, affiliations will be necessary with the present schools of nursing, and the institution should be prepared to render high class pediatric training for student nurses.

Sacred Hearts Hospital (O.C.D.). Beginning in April, 1942, and continuing until the present time*, this O.C.D. Hospital has filled a genuine need in the hospital picture in Honolulu. It has provided the "cushion" which has enabled the community to pull through—from a hospital point of view.

In February, 1944, this hospital had 266 admissions—next to the highest month in its entire history—and still the other hospitals in Honolulu were filled to capacity. Information available would indicate an immediate threat of the closing of this hospital because of the withdrawal of O.C.D. funds. While the actual *average* patient load of Sacred Hearts Hospital may be adequately provided for elsewhere, there will be *absolutely no* safety valve in Honolulu in case of epidemic, undue occurrence of illness, or other incidents, and it would appear absolutely essential to maintain this emergency hospital until newly constructed beds and necessary appurtenances become available to the extent of at least 125 beds.

R. H. ONSTOTT, Medical Director, USPHS
Director, USPHS District No. 10

* It has now been closed.—ED.



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COUNTY SOCIETY REPORTS

HONOLULU COUNTY MEDICAL SOCIETY

Since no report of the Board of Governors or Membership meetings of the Honolulu County Medical Society has appeared in the HAWAII MEDICAL JOURNAL since May, there follows a brief summary of the more important subjects brought up for discussion.

Medical Library. At its meeting on May 12, the Board of Governors took action on the management of the Medical Library. Mrs. Ethel Hill, a full-time librarian, has been engaged in order to handle competently the growing demand for books. The Library is now open from 7:30 to 9 in the evening, as well as from 8 to 4:30 during the day. The evening hours are a special convenience to local physicians and to doctors in the services. Because of the great need for such a library at this distance from medical centers, a \$3,000 appropriation was added to the library budget from the Society's funds on July 7.

Membership. General membership dues were raised from \$25 to \$60, with an initiation fee of \$50. For physicians on salary and not in private practice, the dues were set at \$30 yearly, also with an initiation fee of \$50.

New members admitted were:

DR. G.G. HOLDT (service)

DR. ROBERT G. HUNTER (service)

CAPT. (now Rear Admiral) LUCIUS W. JOHNSON, MC, USN (honorary)

DR. ED LAM

LT. COL. TELL NELSON, MC, AUS (service)

COL. ROBERT ONSTOTT, USPHS (service)

DR. H. JOSEPH SIMON

Industrial Fee Schedule. After three years of discussion about changes in the industrial fee schedule, the new schedule was presented to the insurance carriers. The Workmen's Compensation Commission was notified that the schedule would go into effect "as of July 1, 1944." The insurance companies wrote the Board of Governors that the change in fee schedule would have to be referred to their respective home offices for approval, thus delaying its adoption. The Board of Governors postponed the effective date to October 1, 1944. The Board invited representatives of the insurance companies to discuss the change of fee schedule at its meeting on August 18. The insurance men insisted that the matter must be approved by their home offices, and proposed an immediate temporary blanket increase of 20 per cent over

existing fees. The Board of Governors decided to accept the 20 per cent increase and appointed a special committee for further discussion.

Medical Certificates for Absence. The Honolulu County Medical Society met with medical men of the Army and Navy to discuss various aspects of the problem of absenteeism in industry. Various misunderstandings were cleared, a simplified new form was adopted, and the process of medical certification runs fairly smoothly now.

Procurement and Assignment. At the evening membership meeting on July 7, the Territorial Association's delegate to the American Medical Association convention reported on the subject of procurement and assignment. Because of endless delays in checking the qualifications of every man considered for a commission, the procurement of local doctors in Hawaii has practically come to a standstill.

Prostitution. The Board of Governors discussed with Dr. Allison the subject of local prostitution. Pros and cons were cited and finally the Board voted to support the resolution of the House of Delegates of the American Medical Association, which says in short: (1) control of venereal disease requires elimination of commercialized prostitution; (2) medical inspection is not trustworthy; and (3) prostitution is unlawful.

The matter of prostitution was brought up at the evening meeting of the Society on August 4. It was brought out that the venereal disease rate here is so low as to be negligible, that the whole problem is more social than medical, and that it would be best for the Medical Society to keep out of the argument. Therefore the whole resolution regarding prostitution was tabled.

Veterans' Advisors. The Board of Governors met on August 4 with the Veterans' Advisors Committee, which was appointed by the Governor to coordinate community services for the returning war veterans. The County Society appointed three members to act as an advisory committee to the Veterans' Advisors.

Legal Advisor. The Board of Governors felt that the aid of a legal advisor for the County Society might be very desirable. Such service and its cost were investigated. The expense of a legal advisor was thought to be out of line with the finances of the Society.

M. GORDON, M.D., *Recording Secretary*

HAWAII COUNTY MEDICAL SOCIETY

The 231st regular meeting of the Hawaii County Medical Society was called to order by the President, Dr. M. H. Chang, at 7 P.M. Thursday, September 7, 1944, in the Library of the Hilo Memorial Hospital. The meeting was preceded by a buffet dinner in the dining room of the Hilo Memorial Hospital given by Mr. Hanner, superintendent of the Hospital, in order to introduce Mr. Moore, x-ray technician, and Dr. Barnes, pathologist, to the Medical Society.

Instead of the usual presentation of a paper, a seminar was held discussing the use of penicillin by members of this society. Dr. Orenstein, chairman of the Penicillin Committee, opened the discussion, and it was followed by all members taking active part either in the discussion or presenting cases which were treated by them.

Dr. Leslie reported for the Tuberculosis Committee. Dr. Brown, Dr. Bernstein and Dr. Leslie met once, and discussed the coming tuberculosis surveys that are going to be held when the portable machine arrives here. It was stated that the machine may arrive before the end of this year. No definite plans were made. The Tuberculosis Society will contact the H.S.P.A. to see how many plantations will participate in this survey. Dr. Bernstein stated that in the survey, the 4x5 films will be taken and suspicious cases will be referred to their private physicians for the larger x-rays.

The question was raised by Dr. Carter: "What control or authority has the Board of Health to quarantine a person having tuberculosis?" Dr. Bernstein stated that if a person is known to have a positive sputum and he does not isolate himself, he is considered as a public menace and therefore, may be compelled by the law to be quarantined. Dr. Patterson suggested that during the Tuberculosis Survey, a blood Wassermann survey also be carried out.

Dr. Orenstein reported on the activities of the O.C.D. He stated that an inventory should be made of all O.C.D. equipment and supplies and that if anyone wanted to use them, to go ahead and do so, because later, these supplies will either be given away or sold for a fair price. He emphasized, however, that it was necessary to make a correct inventory of all supplies before using any of them.

R. T. EKLUND, M.D., *Secretary*

MAUI COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Maui County Medical Society was called to order on September 12, 1944, by Dr. Patterson.

A motion was made and seconded to accept for membership in our Society Dr. Tzu Pei Chou and Dr. Ellen Leon Chou, who are transferring from the Honolulu Medical Society.

Dr. Osmers reported for the Penicillin Committee. He stated that the doctors have been lax in sending the required follow-up report. He also said that we have plenty of the drug on hand.

Dr. Norman Sloan spoke on "Leprosy."

Meeting October 17, 1944. Dr. Patterson presided. Members present: Drs. Patterson, Balfour, McArthur, Shimokawa, Kanda, K. Izumi, Osmers, Rothrock, St. Sure, and von Asch. Guests: Drs. Klopfensteni, Nelson, Musseto, Gaspar and Weaver.

The first order of business was an announcement of the new fee schedule for industrial accidents which is as follows:

The following changes in the Industrial Accident Fee Schedule were adopted at the regular meeting of the Honolulu County Medical Society September 1, to become effective as of September 2.

First office visit	\$3.50
Subsequent office visit	2.00
Hospital visit	2.50
Home, day visit	4.00
Home and hospital, night visit	7.00

A surcharge of 20 per cent on all items in the old fee schedule with the exception of x-ray fees and those fees pertaining to special fields as laboratory, eye, ear, nose and throat. This surcharge to be in effect for the duration and for six months thereafter or until a new fee schedule is drawn up and adopted.

The increases referred to above do not apply to any case active at this time; these are to be carried to their completion under the old fee schedule.

These revisions were adopted by the Society with the understanding that a new permanent fee schedule be submitted by the committee within sixty days if possible.

Dr. McArthur moved that, due to the increased costs of medical care, the Maui County Medical Society accept any new Industrial Fee Schedule adopted by the Honolulu County Medical Society. Seconded and passed. Dr. Patterson appointed Dr. McArthur to notify the local insurance agencies.

Dr. Patterson read a letter from Dr. Schram who announced that the fee for chest x-rays is now \$2.00, as authorized by the Territorial Board of Health. Dr. McArthur moved that the Public Health and Legislative Committee investigate what persons are eligible to have chest pictures taken at the fee which Dr. Schram announced. Seconded and passed.

Dr. McArthur brought up the problem of quacks and cults indulging in borderline practice of medicine. The matter was referred to the Public Health and Legislative Committee.

Dr. Patterson gave a report on the library committee. Dr. McArthur and Dr. Rothrock both donated journal subscriptions to the library.

Dr. McArthur introduced Dr. Nelson, of the Navy, who spoke on "Obstetrical Difficulties."

GEORGE VON ASCH, M.D., *Secretary*

Regular meeting: November 14, 1944 at Dr. McArthur's office.

Dr. Patterson presided.

Members present: Drs. Balfour, Osmers, Kanda, K. Izumi, Sanders, Patterson and McArthur.

There were seven Navy guests present.

Business: Dr. Balfour reported for the Legislative and Public Health Committee. He read a letter from Dr. Wilbar in which it was brought out that any chest clinic patient should receive an x-ray of the chest for \$2.00. Food handlers and school teachers have to get their x-rays from private physicians. Also the laws regarding the practice of the healing arts was quoted and it is necessary for all persons practicing such to have a license. If persons are found practicing beyond the field allowed by the license, they may be prosecuted. Even if this is done without pay they may be prosecuted. It is the duty of persons who know of such practices to report them so that evidence against such a practitioner may be accumulated and action taken.

Scientific program: Dr. Baty, U.S.N. assigned to the Marines, and his staff, gave an excellent program on the problems of the Marines. Having been in several battles they were able to tell us exactly how battle casualties had to be handled. Of special interest was the handling of shrapnel wounds of the abdomen. No doubt experience learned in the handling of such wounds will determine what type of treatment abdominal injuries will receive in the future.

Meeting adjourned.

W. B. PATTERSON, M.D., *Reporting*

KAUAI COUNTY MEDICAL SOCIETY

The regular meeting of the Kauai County Medical Society was held on Oct. 11, 1944, at the Wilcox Hospital at 7:00 p.m. Members present were Doctors Chisholm, Liu, Hata, Boyden, Wallis, Kuhns, Brennecke, and Harris.

The minutes of the previous meeting were read and approved.

Dr. Wallis, chairman of the committee on the H.M.S.A. plan, reported that progress on inauguration of the plan on Kauai had reached an impasse due to the rule on some of the plantations that payroll deductions are not permitted.

Dr. Wallis made a motion that the Kauai County Medical Society adopt the revised industrial accident fee schedule of the Honolulu County Society and that Dr. Fennel and the Council of the Territorial Association be notified of the action. Seconded by Dr. Boyden. Passed.

Dr. Wallis, chairman of the committee on the proposed Board of Health Laboratory for Kauai, read a letter from Dr. Wilbar, President of the Board of Health, addressed to the Board of Trustees of the Wilcox Hospital. The letter approved the recommendations of the committee. Dr. Wallis had not yet received an answering communication from the Board of Trustees of the Wilcox Hospital.

A letter from Hazel H. Bond of the Honolulu Blood Bank was read, stating that a limited amount of A and B specific substances was available for emergency use only.

Dr. Chisholm read a letter from Dr. Richard Kepner, chairman of the committee on psychiatry and neurology of the Territory Association, asking for suggestions and recommendations from the various committee members. Dr. Wallis stated that a full-time psychiatric social worker would arrive shortly on Kauai.

Dr. Chisholm read a letter from Dr. Marks, Director of the Bureau of Tuberculosis, answering questions in regard to the examination of food handlers.

In regard to the physical examination of high school pupils, it was moved by Dr. Wallis that the President of the Society be given authority to appoint such physicians as might be interested to carry out the examinations. Seconded by Dr. Boyden. Passed.

Dr. Waterhouse, a long-term and honored member of the Society, requested that he be retired from ac-

tive membership. On motion of Dr. Boyden, seconded by Dr. Wallis, and passed, Dr. Waterhouse became a life-time honorary member of the Society.

The Secretary reported that he had received a check for \$100 from the Kauai Tuberculosis Association for the purchase of books for the Society library. A motion by Dr. Boyden that the Society express its thanks to the Tuberculosis Association was seconded by Dr. Hata and passed.

Dr. Wallis read a report made by Dr. Pinkerton, Delegate of the Territorial Association to the A.M.A. convention, of proceedings at the convention.

It was moved by Dr. Wallis that the committee on public policy and legislation make plans for discussing at the November meeting questions concerning a meeting of the Society with the newly elected legislators of Kauai. Seconded by Dr. Boyden. Passed.

Dr. Chisholm requested any members who had information of interest to the HAWAII MEDICAL JOURNAL to pass same along to Dr. Wallis.

No further business appearing, the meeting adjourned at 9:15 p.m.

DAVID LIU, M.D., *Secretary*

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MISS DORIS T. YASUTAKE, Library Assistant

Phone 65370

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RECENT ACQUISITIONS

By Purchase:

Ballenger, H. C. *Diseases of the nose, throat and ear.* 8th ed. 1943.

Ballenger, H. C. *Manual of otology, rhinology and laryngology.* 2nd ed. 1943.

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U. S. Navy. *Handbook of the hospital corps.* 1939.

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By Gift of Authors:

DR. H. L. ARNOLD. *Poisonous plants of Hawaii.* 1944.

DR. RICHARD D. KEPNER. *Mental changes after bilateral prefrontal lobotomy.* By Dr. Stanley Porteus and Dr. Richard Kepner. 1944.

DR. PAUL GATES KREIDER. *The bacteriology, pathology and etiology of measles pneumonia.* 1943.

LT. COMDR. FREDERICK G. FOX. *Acute rhinitis and sinusitis.* 1944.

From Dr. F. L. Pleadwell

Who's who in America. v. 22. 1942-1943.

From the Surgeon General (through Dr. H. W. Jones)

Index catalogue of the Library of the Surgeon General's Office. v. 8.

From the U. S. Naval Hospital, No. 128

Quarterly cumulative index medicus. vv. 1-6.

From the Nurses' Association

Kovacs, Richard. *Manual of physical therapy.* 3rd ed. 1944.

From the Tuberculosis Association

Hudson, Holland. *Occupational therapy in the treatment of the tuberculosis patient.* 1944.

From the Hawaiian Sugar Planters' Association

Current list of medical literature. v. 1.

From the American Medical Association

Council on Pharmacy. *New and non-official remedies.* 1944.

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From the Philosophical Library

Gregg, A. L. *Tropical nursing*. 1944.
 Gunther, C. E. M. *Practical malaria control*. 1944.
 Rolleston, Humphrey, ed. *Minor surgery*. 1944.
 Seiffert, Gustav. *Virus diseases in man, animal and plant*. 1944.

From the City and County Health Department

Annual reports, 1939-43.

From the Board of Health

Annual reports (complete file).
 Leprosy notes.
 Leprosy — summary of recent work.

From the Kula Sanatorium

Annual Reports, 1929-1943.

From Mrs. Laura Dowsett

Queen's Hospital annual reports, 1916, 1929-1943.

From Samuel Mahelona Memorial Hospital

Annual reports, 1939-43.

From Dr. S. M. Wishik

American Review of Soviet Medicine, Dec. 1943.

From Ethicon Suture Laboratories

Great American surgeons (folio of portraits).

From the Baruch Committee on Physical Medicine

Report of the Committee, April 1944.

From the American Therapeutic Society

Transactions, 1941-42.

From Dr. Jesse W. Smith

American Journal of Roentgenology and Radium Therapy
 Radiology

From Dr. Sumner E. Price

American Journal of Clinical Pathology (missing copies)

From Dr. H. C. Gotshalk

American Heart Journal (missing and duplicate copies)
 Archives of Internal Medicine
 Archives of Pathology
 Bulletin of the New York Academy of Medicine
 Journal of Pathology and Bacteriology
 Proceedings of the Staff Meetings of the Mayo Clinic
 Western Journal of Surgery, Obstetrics and Gynecology

DR. JAMES T. WAYSON has presented the Library with a rare and valuable book, entitled "Leprosy and Syphilis" by W. Boeck and D. Danielssen. It contains thirteen large colored plates and has a two-column text in French and Norwegian. The book is now on display in the Medical Library.

We are attempting to build up a comprehensive collection of books on leprosy, malaria and tropical medicine, and we are particularly grateful to Dr. Wayson for his gift to the Library of this pertinent material.

The Library is the natural depository of local medical manuscripts, letters, photographs, etc. Our historical collection would be greatly enriched by remembrances of physicians in the Territory, and should also prove of irreplaceable value in the future.

JOURNAL SUBSCRIPTIONS

It has been called to our attention that in many instances the Library journal subscriptions are the same as those being taken by individual doctors. Any doctor who is willing to turn over his copies regularly would thereby make it possible for the Library to subscribe to another journal in its place. Following is a list of the 125 journals being currently received in the Medical Library. This does *not* include titles of other partial files, a list of which will appear in the next issue.

- *American Heart Journal
- *American Journal of Diseases of Children
- American Journal of the Medical Sciences
- American Journal of Nursing
- American Journal of Obstetrics and Gynecology
- *American Journal of Ophthalmology
- American Journal of Pathology
- *American Journal of Psychiatry
- American Journal of Public Health
- *American Journal of Roentgenology & Radium Therapy
- *American Journal of Surgery
- *American Journal of Syphilis, Gonorrhea and Venereal Diseases
- *American Journal of Tropical Medicine
- American Medical Association News
- *American Review of Tuberculosis
- *Annals of Internal Medicine (*Gift of Dr. H. L. Arnold*)
- Annals of Otolaryngology & Rhinology
- Annals of Surgery
- Archives of Dermatology and Syphilology
- *Archives of Internal Medicine
- *Archives of Neurology and Psychiatry
- *Archives of Physical Therapy
- Australian and New Zealand Journal of Surgery
- Avance Medical
- *British Medical Journal
- Bulletin of the American Association of Medical Social Workers
- *Bulletin of the American College of Surgeons
- Bulletin of the American Heart Association
- Bulletin of the California State Nurses Association
- Bulletin of the Creighton University School of Medicine

* Binding of these journals is being delayed for want of missing numbers. If anyone has copies he would be willing to give to the Library, they will be gratefully received.

- Bulletin of the History of Medicine (*Gift of Dr. F. L. Pleadwell*)
- *Bulletin of the Los Angeles Neurological Society
- Bulletin of the Medical and Chirurgical Faculty of the State of Maryland
- Bulletin of the Medical Library Association
- Bulletin of the Medical Society of the County of Kings and Academy of Medicine of Brooklyn
- Bulletin of the Menninger Clinic
- *Bulletin of the New York Academy of Medicine
- Bulletin of the San Diego County Medical Society
- Bulletin of the San Francisco County Medical Society
- *Bulletin of the U. S. Army Medical Department (*Gift of Surgeon General's Office*)
- California and Western Medicine
- Canadian Medical Association Journal
- *Cleveland Clinic Quarterly
- Clinical Excerpts
- Clinical Medicine
- Connecticut State Medical Journal
- Current List of Medical Literature (*Gift of Dr. F. J. Halford*)
- Delaware State Medical Journal
- Diabetes Abstracts
- Digest of Treatment
- Family Letter
- Gastroenterology
- Hawaii Health Messenger
- HAWAII MEDICAL JOURNAL
- Hospital Corps Quarterly
- Hospitals
- Hospital Hi Lites (*Gift of U. S. Naval Hospital, Aiea Heights*)
- Human Fertility
- Hygeia
- Illinois Medical Journal
- Industrial Hygiene
- Industrial Medicine
- International Medical Digest
- Isis (*Gift of Dr. F. L. Pleadwell*)
- Journal of Allergy
- Journal of the American Dietetic Association
- Journal of the American Medical Association
- Journal of the Arkansas Medical Society
- Journal of Bone and Joint Surgery (*Gift of Dr. A. L. Craig*)
- Journal of Experimental Medicine
- Journal of Heredity (*Gift of Dr. K. Hosoi*)
- Journal of the Indiana State Medical Association
- *Journal of Laboratory and Clinical Medicine
- Journal of the Medical Society of New Jersey
- Journal of the National Cancer Institute
- Journal of Neuropathology and Experimental Neurology
- *Journal of Urology
- Kentucky Medical Journal
- Laboratory Digest
- Lahey Clinic Bulletin
- *Lancet
- Medical Annals of the District of Columbia
- *Medical Clinics of North America
- Medical Economics
- Medical Journal Abstracts
- Mental Hygiene
- *Military Surgeon (*Gift of Dr. F. L. Pleadwell*)
- Minnesota Medicine
- Mississippi Valley Medical Journal
- Modern Hospital
- Nebraska State Medical Journal
- *New England Journal of Medicine
- New Modern Drugs (*Gift of Capt. A. Sprong*)
- *New Orleans Medical and Surgical Journal
- New York State Journal of Medicine
- North Carolina Medical Journal
- Northwest Medicine
- Nutrition Reviews
- Ontario Medical Review
- Pennsylvania Medical Journal
- Plantation Health
- Proceedings of the Staff Meetings of the Clinic, Honolulu
- *Proceedings of the Staff Meetings of the Mayo Clinic
- Public Health Nursing
- Public Health Reports
- Quarterly Bulletin of Northwestern University Medical School
- Radiology (*Gift of Capt. Joseph Weiss*)
- Revista de Medicina Tropical y Parasitologia, Bacteriologia, Clinical y Laboratorio
- Rocky Mountain Medical Journal
- Scientific Monthly (*Gift of Dr. K. Hosoi*)
- The Star
- Studies from the Rockefeller Institute for Medical Research
- Surgery
- *Surgery, Gynecology, and Obstetrics
- *Surgical Clinics of North America
- Texas State Journal of Medicine
- Texas Reports on Biology and Medicine
- Trained Nurse and Hospital Review
- *United States Naval Medical Bulletin
- Urologic and Cutaneous Review
- Venereal Disease Information
- War Doctor
- War Medicine
- Western Journal of Surgery, Obstetrics and Gynecology
- Wisconsin Medical Journal

* Binding of these journals is being delayed for want of missing numbers. If anyone has copies he would be willing to give to the Library, they will be gratefully received.



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During periods of acute febrile disease, dietary adjustment must be made to satisfy the change in nutritional demands. Protein requirements are increased 50 to 100 per cent, caloric expenditure is raised because of increased heat production, and vitamin needs, especially those of the water-soluble groups, are greater. Only by fully meeting these altered requirements can recovery be hastened, can convalescence be shortened, and the usual state of lethargy reduced in severity.

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CARBOHYDRATE .	30.0 Gm.	62.43 Gm.	VITAMIN D	405 I.U.	480 I.U.
FAT	2.8 Gm.	29.34 Gm.	THIAMINE9 mg.	1.296 mg.
CALCIUM25 Gm.	1.104 Gm.	RIBOFLAVIN25 mg.	1.278 mg.
PHOSPHORUS25 Gm.	.903 Gm.	NIACIN	3.0 mg.	5.0 mg.
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*Each serving made with 8 oz. of milk; based on average reported values for milk.

NOTES AND NEWS

POST GRADUATE COURSE

The Post Graduate Course of the Honolulu County Medical Society will be held in the Mabel Smyth Auditorium in Honolulu from January 8-14, 1945. Medical officers of the army and navy, as well as all members of the Hawaii Territorial Medical Association are cordially invited to attend. The registration fee will be ten dollars. A summary of the program follows:

Monday Evening, January 8, 1945, 7:00-9:00

Symposium: Cardiovascular Disease

- (1) Coronary Occlusion, Coronary Insufficiency and Angina Pectoris
(Capt. Arthur Master, MC, USNR)
Discussion by Major Meyer Friedman, MC, AUS
- (2) Hypertension (Comdr. Lyle M. Nelson, MC, USNR)
Discussion by Colonel Charles T. Young, MC, AUS
Colonel Walter B. Martin, MC, AUS
- (3) Hyperventilation (Comdr. J. J. Short, MC, USNR)
Discussion by Comdr. F. Fetter, MC, USNR

Tuesday Evening, January 9, 1945, 7:00-9:00

Round Table Discussions

- (1) General Medicine
Capt. M. J. Capron, MC, USNR (Chairman)
- (2) Diseases of the Eye
Comdr. F. P. Smart, MC, USNR (Chairman)
- (3) Orthopedics—Reconstructive Surgery and Neurosurgery
Lt. Col. William B. McLaughlin, MC, AUS (Chairman)

Wednesday Evening, January 10, 1945, 7:00-9:00

Symposium: Neuropsychiatry

- (1) Diagnosis of Neuropsychiatric Problems
Comdr. Richard Wilson, MC, USNR
Discussion by Major Gilbert L. Sandritter, MC, AUS

- (2) Therapy in Neuropsychiatric Patients

Lt. Col. M. R. Kaufman, MC, AUS

Discussion by Comdr. W. H. Hutchens, MC, USNR

Major Kenneth Rew, MC, AUS

Thursday Evening, January 11, 1945, 7:00-9:00

Round Table Discussions

- (1) Gynecology and Obstetrics
Dr. Lyle Phillips (Chairman)
- (2) Genito-Urinary Surgery
Comdr. J. P. Altheide, MC, USNR (Chairman)
- (3) Allergy
Lt. Col. Tell Nelson, MC, AUS (Chairman)

Friday Evening, January 12, 1945, 7:00-9:00

Symposium: Cancer

- (1) Recent Investigations in Cancer
Col. A. W. Oughterson, MC, AUS
Discussion by Capt. H. H. Searls, MC, USNR
- (2) Diagnosis Cancer Gastrointestinal Tract
Comdr. A. C. Clasen, MC, USNR
Discussion by Lt. Col. Leslie M. Garrett, MC, AUS
Lt. Col. Joseph E. Walthers, MC, AUS
- (3) Treatment of Cancer Gastrointestinal Tract
Capt. Howard Gray, MC, USNR
Discussion by Lt. Col. Ed J. Ottenheimer, MC, AUS

Saturday Evening, January 13, 1945, 7:00-9:00

Round Table Discussions

- (1) Abdominal Surgery
Capt. L. J. McCarthy, MC, USNR (Chairman)
- (2) Ear, Nose and Throat
Col. Paul H. Streit, MC, AUS (Chairman)
- (3) Tropical Diseases
Col. Elbert DeCoursey, MC, AUS (Chairman)

(4) Skin Diseases

Lt. Comdr. M. Silverman, MC, USNR
(Chairman)

Sunday Morning, January 14, 9:00-11:00

Symposium: Diseases of the Chest

(1) Pneumonia and Tuberculosis

Comdr. W. A. Hobby, MC, USNR

Discussion by Lt. Comdr. L. K. Swasey,
MC, USNR

Capt. Fred Giles, MC, AUS

(2) Diagnosis and Treatment of Bronchiectasis

Col. Forrester Raine, MC, AUS

(3) Diagnosis and Treatment of Bronchiogenic Carcinoma

Comdr. H. D. Adams, MC, USNR

(4) Diagnosis and Treatment of Lung Abscess and Empyema

Col. George Finney, MC, AUS

11:30 A.M.—Picnic

UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed \$500" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years. All interested should write the Secretary, for full particulars.

The selected essay (or essays) will appear on the program of the forthcoming June meeting of the American Urological Association.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1945.

HAWAII DERMATOLOGICAL SOCIETY

The last regular three-monthly meeting of the Hawaii Dermatological Society was held on September 9, 1944, at 881 South Hotel Street. Those present were Dr. James T. Wayson, President; Dr. Harold

M. Johnson, Dr. Harry L. Arnold, Jr., Major David Musman, M.C., A.U.S., Major Solomon Greenberg, M.C., A.U.S. Captain L. H. Rosenthal, M.C., A.U.S., Captain Herbert Lawrence, M.C., A.U.S., Dr. Irvin L. Tilden (by invitation), and Dr. Takeo Fujii (by invitation). Eleven rare or puzzling cases of skin disease were presented by various members and discussed in detail. Transcriptions of the discussion are to be published in the Archives of Dermatology and Syphilology.

The next meeting of the Society will be held on December 9, 1944, and interested physicians are cordially invited to attend and participate. Notification of the exact date, time, and place will be made by post card on request, a few days before the meeting. Requests should be directed to Dr. Arnold Jr. at 881 South Hotel Street, Honolulu.

PSYCHIATRIC SOCIAL WORKER ARRIVES

Miss Mildred Sikkema, psychiatric social worker, has been engaged to work in the member hospitals of the Medical Social Service Association—Queen's, Kuakini and Children's. She took her Master's in Social Science at Smith College School of Social Work. This was followed by experience in psychiatric social work with both adults and children. Miss Sikkema's services are available to any physician for patients irrespective of economic status, whose illnesses are affected by social or emotional problems.

MEMBERS IN SERVICE

CAPT. LUCIUS W. JOHNSON (MC) USN, medical officer of the 14th naval district, has been promoted to the rank of Rear Admiral. Admiral Johnson is an honorary member of the Honolulu County Medical Society. His *Survey Report of Civilian Hospital Needs* was recently published in the HAWAII MEDICAL JOURNAL.

COMDR. R. J. MANSFIELD of the Medical Group received a Legion of Merit award for his work at Attu. Dr. Mansfield was in the original assault on Guadalcanal. He served in combat for many months, saw action at Attu, and then was at Tarawa where he received his decoration. After a service at Philadelphia Navy Yard, Dr. Mansfield has been transferred to surgery at Mare Island.

LT. COL. ROBERT J. HOAGLAND's many friends will be interested to learn that he is commanding a field hospital somewhere in Belgium.

Personal

DR. RICHARD D. KEPNER has had two articles published recently. The first, entitled *An Occupational Formulary for*

Mental Hospitals, appeared in *Occupational Therapy and Rehabilitation*, vol. 23, no. 2, April 1944, pp. 62-67. The second, a monograph written in collaboration with S. D. Porteus and entitled *Mental Changes after Bilateral Prefrontal Lobotomy*, was also published in *Genetic Psychology Monographs*, 1944, 29, pp. 3-115.

DR. COLIN C. MCCORRISTON last September accepted a commission as Lieutenant (jg) in the Medical Corps of the United States Naval Reserve. He and Mrs. McCorrison announced the arrival on September 6 of their second son, William Colin McCorrison.

DR. AND MRS. E. R. AUSTIN announced the birth on October 19 of their third daughter, Linda Leilani Austin.

DR. IVAR LARSEN, physician for the Kohala Sugar Company, took a two weeks vacation last August. He was relieved by Dr. T. A. Casey of Honolulu. While on vacation Dr. Larsen took Dr. Harry Arnold, Jr. and Dr. A. S. Hartwell of Honolulu on a two-day trip over the Kohala Ditch Trail. Dr. Arnold, Jr. and Dr. Hartwell were on the Island of Hawaii for two weeks.

DR. DOUGLAS BELL of Honolulu spent two weeks on the Island of Hawaii in August during which time he managed some successful pheasant shooting.

DR. CYRUS LOO of the Queen's Hospital interne staff spent the month of August at the Olaa Hospital on his plantation service.

DR. PAULINE STITT of the Bureau of Maternal and Infant Health of the Board of Health was on the Island of Hawaii for six weeks. Dr. Stitt went right into the districts where the physicians are doing their work and secured a clear picture of what is being done, as well as offering an excellent opportunity for consultation along the lines of her department.

DR. SAMUEL ALLISON was on the Island of Hawaii in early September and was available for consultations on venereal disease problems. These visits of a venereal disease specialist of the Board of Health are gratifyingly frequent and are most helpful to the men in the outlying communities. Dr. Allison has more recently returned from a business trip to the Mainland.

DR. RALPH B. CLOWARD of Honolulu was on the Island of Hawaii for a series of neurological clinics around the island under the auspices of the Bureau of Maternal and Infant Health. This is a new service and should prove a helpful one. Dr. Cloward addressed the Hawaii County Medical Society on October 7, 1944 at the semi-annual meeting at the Hilo Country Club.

DR. R. P. WIPPERMAN, former physician for the Hakalau Sugar Company, has left for New York and other cities to pursue post-graduate study in obstetrics and gynecology. No announcement of his successor has yet been made.

DR. W. N. BERGIN, formerly physician at Laupahoehoe, has replaced Dr. Thomas Keay at Pepeekeo. Dr. Keay has retired and is living in California. Dr. Fernandez has replaced Dr. Bergin at Laupahoehoe and Dr. Joseph Simon is serving as assistant to Dr. Bergin.

The Seventh Annual Forum on Allergy will be held in the Hotel William Penn, Pittsburgh, Pennsylvania, on Saturday and Sunday, January 20-21, 1945. This is a meeting to which all reputable physicians are most welcome, and where they are offered an opportunity to bring themselves up to date in this rapidly advancing branch of medicine by two days of intensive post-graduate instruction. For instance, the twelve study groups, any two of which are open to him, are so divided that those dealing with ophthalmology and otolaryngology, pediatrics, internal medicine, dermatology and allergy run consecutively. In addition, the study groups are arranged on the basis of previous registration. In this way, as soon as the registrations are completed, the registrant is expected to write the group leader and tell him just what questions he wants brought up in the discussion. Attention is also called to the fact that during these two days almost every type of instructional method is employed: special lectures by outstanding authorities, study groups, pictures, demonstrations, symposia and panel discussions.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, and MARCH 3, 1933

OF HAWAII MEDICAL JOURNAL published bi-monthly at Honolulu, Hawaii for 1944.

TERRITORY of Hawaii } ss.
COUNTY of Honolulu }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared HARRY L. ARNOLD, JR. M.D., who, having been duly sworn according to law, deposes and says that he is the Editor of the HAWAII MEDICAL JOURNAL and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher The Hawaii Territorial Medical Association, 510 S. Beretania St., Honolulu, T.H.

Editor Harry L. Arnold, Jr., M.D.

Managing Editor Edith C. Bennett

Business Managers None

2. That the owner is: The Hawaii Territorial Medical Association,
510 S. Beretania St., Honolulu, T. H.

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For the usual concentration (5000 Oxford Units per cc.) inject 20 cc. of physiologic salt solution into the vial in the usual aseptic procedure.



Invert the vial and syringe (with needle in vial), and withdraw the amount of penicillin solution required for the first injection.



Store vial with remainder of solution in refrigerator. Solution is ready for subsequent injections during the next 24 hours.

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For administration in the physician's office or in the patient's home, Penicillin-C.S.C. will be available in a convenient combination package, as soon as the drug is released for unrestricted use in civilian practice. This combination package provides two rubber-stoppered, serum-type vials. One vial contains enough physiologic salt solution to permit the withdrawal of 20 cubic centimeters. The other vial contains 100,000 Oxford Units of penicillin sodium or penicillin calcium* respectively.

The physiologic salt solution is sterile and free from fever-producing pyrogens. Penicillin-C.S.C.—whether the sodium salt or the calcium salt—is bacteriologically and biologically assayed to be of stated potency, sterile, and free from all toxic substances, including pyrogens, as attested by the control number on the package.

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After the desired amount of the solution for the first injection has been withdrawn, the vial containing the remainder of the solution should be stored in the refrigerator. It is ready for the next injection—the desired amount then merely has to be withdrawn under proper sterile technic.

When released for unrestricted marketing, Penicillin-C.S.C. will be stocked throughout the United States by a large number of selected wholesalers. Any pharmacist thus will be able to fill professional orders promptly.

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Therapeutic Reference Table... Penicillin-C.S.C.

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	• Chronic Otitis media	100,000 U.	I.V.	4-6 hr.	10-14 days
	• Rheumatic fever	100,000 U.	I.V.	4-6 hr.	10-14 days
	• Syphilis	100,000 U.	I.V.	4-6 hr.	10-14 days
2. All hemolytic streptococcal infection	• C. B. (B. C.)	100,000 U.	I.V.	4-6 hr.	10-14 days
	• Staphylococcus	100,000 U.	I.V.	4-6 hr.	10-14 days
	• Diphtheria	100,000 U.	I.V.	4-6 hr.	10-14 days
	• Tetanus	100,000 U.	I.V.	4-6 hr.	10-14 days

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The coil spring in the rim of the "RAMSES" Diaphragm is flexible in all planes, permitting adjustment to muscular action.

The spring used has sufficient tension to insure close contact with the vaginal walls during use.

The spring is covered with soft rubber tubing which serves to protect the patient against undue spring pressure. Also provides a wide unindented area of contact.



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"DICUMAROL" at present is only available for oral administration. Its effect is to lengthen the prothrombin time by decreasing the prothrombin concentration of the blood. There is a latent period of 24 to 48 hours or more before the action of the drug can be detected. The increase in prothrombin time

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2

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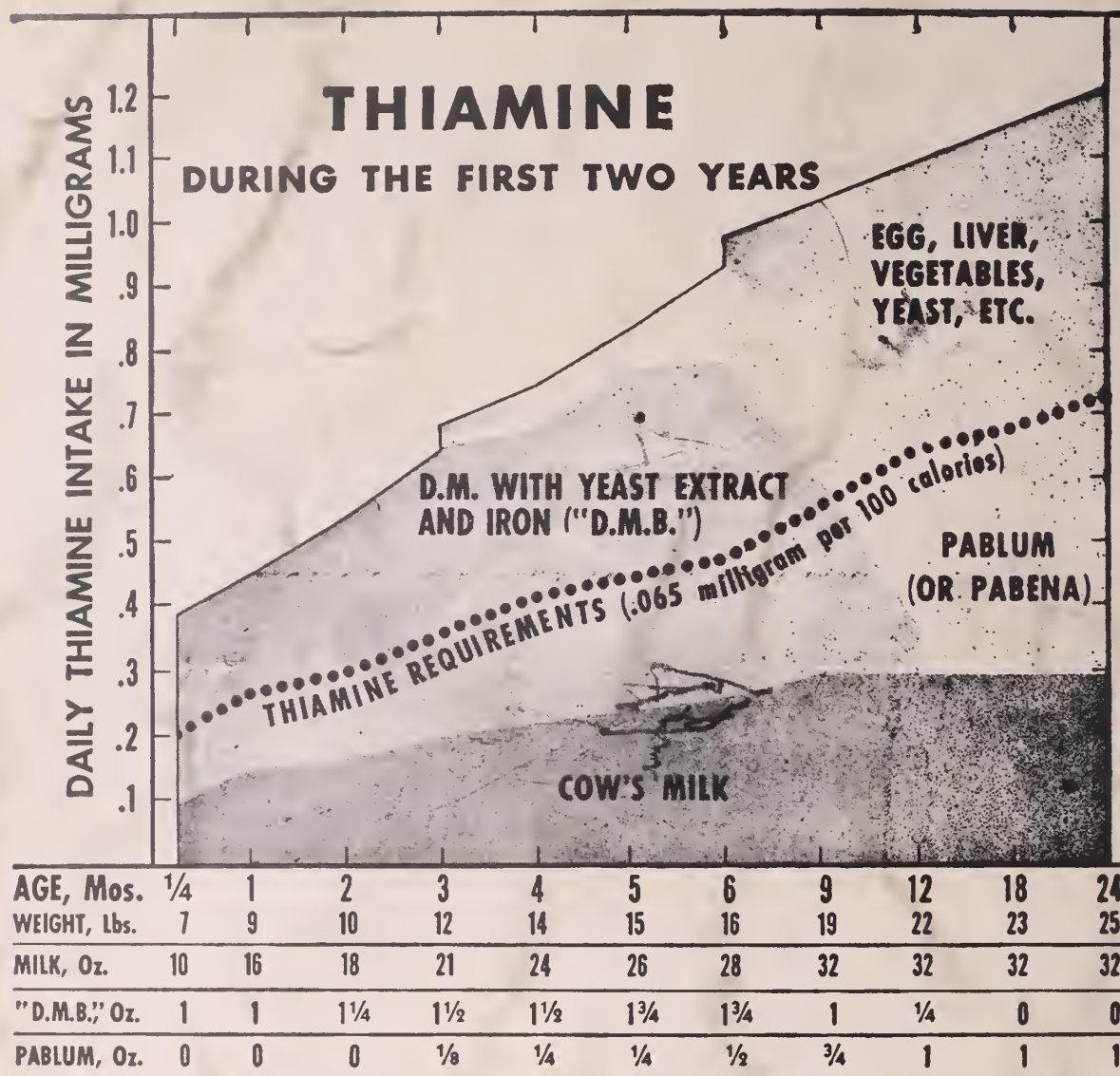
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HAWAII MEDICAL JOURNAL

VOLUME 4

JANUARY-FEBRUARY, 1945

NUMBER

AN OUTBREAK OF FISH POISONING IN HONOLULU, HAWAII

RICHARD K. C. LEE, M. D.

AND

H. Q. PANG, M. D.

THE N.Y. ACADEMY
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THE USE OF THE WELTMANN REACTION IN MYOCARDIAL INFARCTION

ALFRED S. HARTWELL, M. D.

A DOCTOR LOOKS AT AUTOMOBILE ACCIDENTS

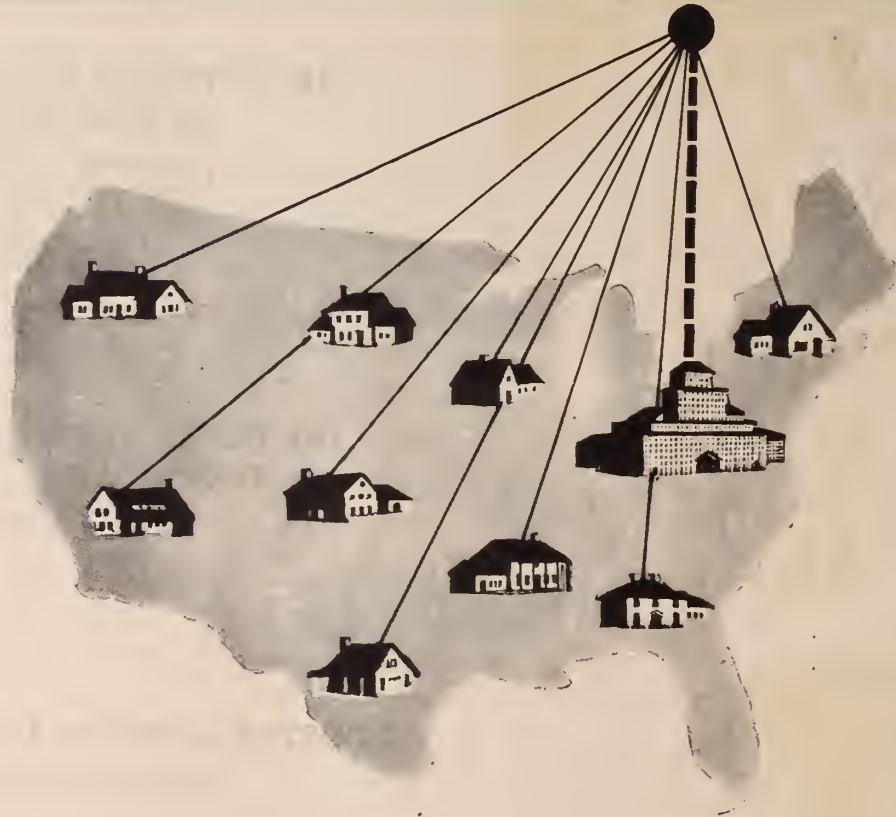
WILLIAM JOHN HOLMES, M. D.

ANNUAL BUSINESS MEETING
HONOLULU COUNTY MEDICAL SOCIETY

APRIL 6, 1945



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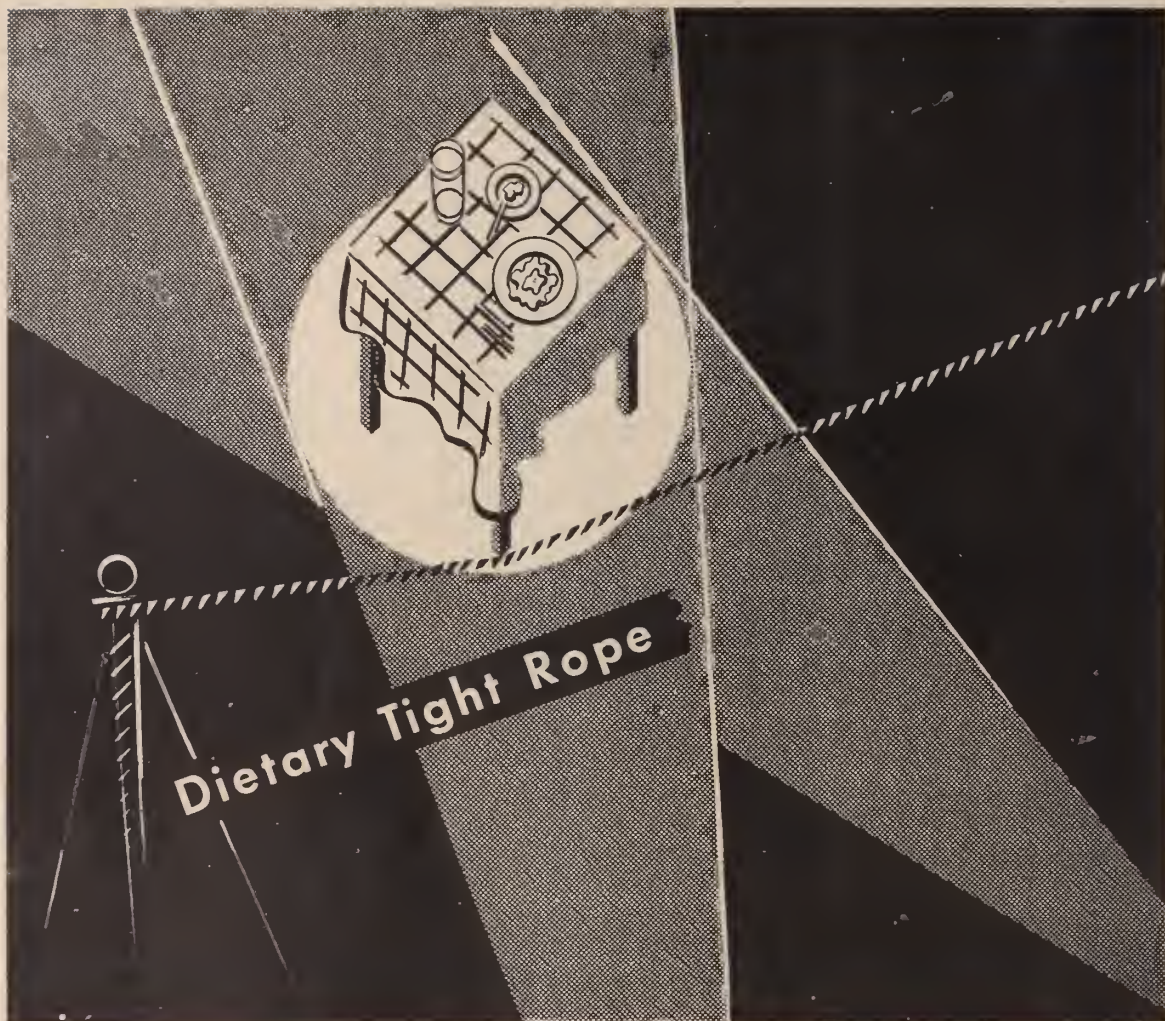
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¹ Tracy Putnam: Convulsive Seizures, p. 4, J.B. Lippincott Co., 1943.



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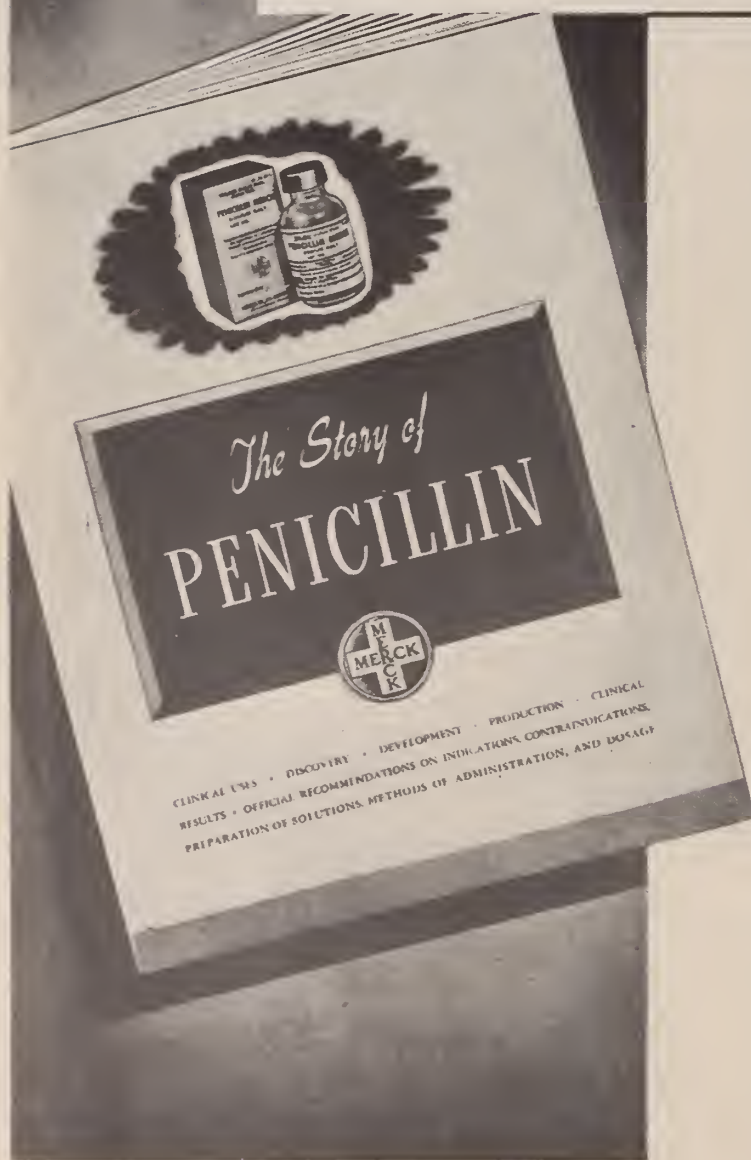
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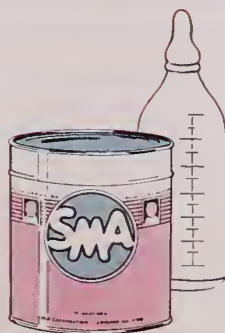
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An Outbreak of Fish Poisoning in Honolulu, Hawaii

RICHARD K. C. LEE, M.D., AND H. Q. PANG, M.D.

Honolulu

Poisoning of man by fish may occur in two ways: (1) as a form of food poisoning either by a toxin arising from decomposition or by toxins present in the living fish, and (2) by inoculation of toxins through wounds inflicted by the fish.

David Starr Jordan¹, in the chapter on Adaptations of Fishes from his textbook, "A Guide to the Study of Fishes," states that in certain groups of fishes a strange form of self-protection is acquired by the presence in the body of poisonous alkaloids, by means of which the enemies of the species are destroyed in the globe-fishes or puffers, the filefishes and in some related forms. The alkaloids produce a disease known as Ciguatera (a term popularly used for fish poisoning in the West Indies) characterized by paralysis and gastric derangements. Severe cases of Ciguatera in humans, as well as in lower animals, may end fatally in a short time.

He describes how, in certain groups of fishes in the tropics, individual fishes are sometimes rendered poisonous by feeding on poisonous mussels, holothurians or possibly polyps, specimens which at certain times and especially in the spawning season develop alkaloids which may cause Ciguatera in man. The true cases of Ciguatera are produced by the specific poisonous alkaloids, most highly developed in the globe-fishes or puffers. These alkaloids are most developed in the ovaries and testes and in the spawning season. They are also found in the liver and sometimes elsewhere in the body of the fish.

The illness produced by these alkaloids must be differentiated from that produced by the leucomaines and the so-called ptomaines in decaying flesh or in the oil diffused through it. Poisonous bacteria may be destroyed by cooking but the alkaloids which cause Ciguatera are unaltered by heat.

The report is concerned with an acute and limited outbreak of fish poisoning due to the presence of inherent toxins in the living fish involving 24 known cases following the eating of black sea bass brought in from Midway. We believe that the poisoning in these reported cases was due to a toxin present in the flesh of the fish consumed. From the available information and evidence, this fish was brought in to Honolulu under satisfactory refrigeration conditions and all persons consuming them reported on the apparent visible and olfactory freshness of the fish. In Hawaii Dr. Nils P. Larsen² in 1939 reported three cases of tetrodon poisoning following the eating of the puffer or balloon fish. The toxin present in the sea bass is probably an alkaloid less toxic than that of

the puffer fish. The clinical signs and symptoms of these two types of fish poisoning are characteristic and distinctive.

EPIDEMIOLOGY

On November 27, 1944, one of us (H.Q.P.) reported to the health department that he had treated individuals for an illness that was characterized by vomiting, diarrhea, severe aches and pains in the extremities and the feeling of numbness and tingling of the hands and feet, which followed the eating of fish brought in from Midway. Investigation revealed two dozen cases all giving a similar history of being given fish brought by a friend who had come from Midway.

A catch of black sea bass, red snapper and mahi-mahi* was brought in to Honolulu Wednesday evening, November 22, 1944, and distributed to friends. In most instances the fish was cleaned and kept under refrigeration until November 27, because of the "Thanksgiving turkey." On Monday, November 27, the person who brought in the fish, although having been warned by his friends that the fish he had brought back from Midway made them ill, went ahead and fed it to a gathering of eight people, all of whom suffered from an attack of fish poisoning within four to six hours. He and his wife felt that the portions of the fish he had brought back looked and smelled so fresh that he was sure they were not poisonous.

A sample of the fish was brought in to the Board of Health laboratory and from the general appearance, the bass did look "fresh." Bacteriological examinations did not reveal any organisms on culture or direct smears.

All patients who ate the fish identified the causal agent as the black sea bass. Jordan and Tinker³ classify this fish in the Sea Bass or Grouper family (which includes the sea perch, tattlers and barbers) and technically in the species called "Epinephelus." Tinker³ describes this species as the family of the sea bass in a larger family of carnivorous marine fishes. There are more than 400 known species in this family. The Hawaiians know it as the "Hapapuu"; the Chinese as "Shakpan"; and the Japanese as "Ara." One of the patients who had been stationed at Palmyra said that the navy department, during the period he was there, had signs out warning the personnel about eating fish caught in the lagoons during certain months of the year. The red snapper was implicated.

* Dolphin.—Ed.

Dr. Peter Buck of the Bishop Museum informed one of us (R.K.C.L.) that in his classes to the service personnel assigned to the areas in the South Seas, he warns the men that the natives should be questioned about the possibilities of "poisonous fishes" in those areas. In the *Honolulu Star-Bulletin* on July 12, 1944, a news item indicated that Sergeant L. O. Shermer of the Altadena substation had been given leave of absence to catalog poisonous fishes for the foreign economic administration. The navy handbook mentions only three poisonous fishes but Sgt. Shermer states that there are literally hundreds of fishes containing a poisonous alkaloid so deadly that only one mouthful might be fatal.

REPORT OF CASES

The following are case histories of patients as reported and seen by one of us (H.Q.P.):

CASE 1. G. K., a white male, age 50, ate some black sea bass at 7:30 P.M. on November 26, 1944 and at 12:30 the next morning began having diarrhea which was accompanied by slight abdominal pains. Stools were liquid and yellow in color but later were bile stained. He had about ten to twelve bowel movements at ten- to fifteen-minute intervals. There was no nausea or vomiting. At 2 A.M. his lips began to feel numb, followed in about fifteen minutes by numbness on both sides of his face and then both hands. At the same time he began having aching pains in both thighs and knees not accompanied by any rigidity. There was no pain below the knees. Pain increased in intensity till 8:00 A.M. and codeine had to be administered for relief.

He also noticed a peculiar burning sensation in his lips and mouth while drinking a glass of water. A cold object or a glass of tap water at room temperature felt like "dry ice" in his palms. This sensation was present in the plantar surfaces of his feet and he found it difficult to walk barefooted because of this peculiar feeling. The dorsal surfaces of his hands felt normal. Chest, heart and abdomen were normal. Knee jerks were present.

Two days later he began having pruritus of both palms and soles but there was no visible rash. His testicles felt big and heavy although there were no visible or palpable signs of enlargement or edema. He had to force himself in urinating, as urine did not seem to flow freely.

He was hospitalized on November 29, 1944 because of pains, irritability and insomnia. Urine revealed a slight trace of albumin. Blood count showed 85 per cent hemoglobin, 4,800,000 red blood cells, 8,500 white blood cells, 76 per cent polys, 19 per cent small lymphocytes, and 5 per cent large lymphocytes. One hundred mg. of thiamin chloride intravenously was administered daily without any relief of pain or paresthesia.

Codeine by mouth gave temporary relief and had to be repeated. He was discharged from the hospital on December 5th, still complaining of paresthesia in his palms and soles, but free from pain.

CASE 2. Mrs. E. W., Chinese female, age 34, attended the same party as Case 1 and ate the same type of fish. Diarrhea began at 12:30 A.M. on November 27, 1944 but she was free from abdominal pains or colic. She had three liquid stools at five-minute intervals. Her lips and face began to feel numb, which she described as "a feeling I get after novocaine injection for tooth extraction." Her thighs and legs began to ache with increasing intensity and her back felt as if she was being tied in a knot. Pruritus of the

palms and soles began on November 29, 1944. She also complained about the same "dry ice sensation" in her lips, mouth and hands as in Case 1.

Physical examination was essentially negative. The urine showed a slight trace of albumin. Calcium gluconate, 10 cc. of 10 per cent solution, was given intravenously, with almost immediate relief of pain, although muscular tenderness and paresthesia remained. Relief was only temporary, however. She received four daily injections of calcium gluconate. One week later muscular aches and pains were completely relieved with the exception of a slight residual backache. The "dry ice" sensation persisted for ten days.

CASE 3. R. L., Chinese male, age 28, ate some black sea bass at 6 P.M., November 24, 1944. He began having vomiting and diarrhea with only slight abdominal pains at 10:30 P.M. the same day. The next day he felt weak and began having sharp, shooting pains in his hands, arms, legs and feet. He described pain as alternating, first in one leg and then the other. He began complaining of pruritus on November 27, 1944, which lasted till December 3, 1944. Pruritus was localized to the abdomen, the legs below the knees, and the feet and hands. He also had the same peculiar feeling in his hands and mouth as in Cases 1 and 2. His description of drinking a glass of tap water was vivid, "I couldn't swallow a glass of cold water fast enough because it burnt my mouth." This abnormal sensation was not felt in the esophagus or stomach.

CASE 4. Mrs. R. L., Chinese female, age 24, wife of Case 3, ate same fish at the same time. Her diarrhea was more severe than in Case 3 but subsequent symptoms were almost the same.

CASES 5, 6, AND 7. Mr. and Mrs. F. A. and daughter, Miss E. A., Chinese, ate some black sea bass on November 25, 1944 at 8:00 P.M. At 1:30 A.M., November 26, 1944, Mrs. F. A. began to have chills and her arms and legs began feeling numb. At 2:00 A.M. she began having pains all over her body, especially the joints. However, she did not have any nausea, vomiting or diarrhea. She was seen at 5:30 A.M. at which time she felt weak and somewhat prostrated and complained of severe pains in her arms and legs. She was unable to walk a few steps without pain. Paresthesia was already present and she described a numb feeling in her fingertips and toes. Knee jerks were absent on November 28. Codeine grains $\frac{1}{2}$ and aspirin grains 10 relieved the pains but had to be repeated every two or three hours. Improvement and disappearance of symptoms were gradual and on December 8, 1944 she felt well but slightly weak.

At 12:30 A.M. on November 26, 1944, Mr. F. A. had about six liquid stools at five- to ten-minute intervals and his chief complaints were pains in both knees and thighs. Numbness of his hands was only slight but he noticed weakness of his bladder and had to make an effort to urinate as in Case 1. He was able to be up and about on November 27, 1944, although he still had muscular aches and pains and pruritus of his palms.

Miss E. A. had severe vomiting spells and about six watery stools. At 5:30 A.M. when I examined her she seemed to be cold and clammy and was complaining of body aches and pains. Heart, lungs and abdomen were normal. On November 27, 1944 a maculo-papular eruption, associated with itching, appeared on her chest, abdomen, arms and thighs, which lasted for two days. Calamine lotion relieved the itching.

CASE 8. Miss A. C., Caucasian, age 26, ate some black sea bass on November 27, 1944, and had vomiting and diarrhea followed by muscular aches, pains and tingling sensations in her finger tips. Five others in the same party also became ill four to five hours after eating this fish. These cases were diagnosed as ptomaine poisoning by their own physician.

DISCUSSION

Fish poisoning caused by alkaloids in the flesh of fishes has been reported fairly frequently in the literature for the puffer fish. Most of these cases ended fatally.

No special studies of the suspected fish have been made in regard to the sea bass, and limited facts are available about the clinical studies of the victims; because no fatalities have been reported, no pathologic or post mortem studies exist. Outbreaks in the West Indies usually occur during the months of August through January.

This report discusses the possibilities of fish poisoning by other varieties of fish brought in from the warmer waters of the South Pacific. It will be difficult to determine from the fish brought in whether they are toxic to man. Certain months of the year when the algae, plankton or mussels eaten by these varieties of fish develop poisonous qualities should be known so that the public can be warned about the toxic qualities of them. Further studies of the flora and fauna of the South Pacific Islands should be carried out by governmental agencies. If the fishing industry expands to these atolls in the South Pacific, more cases of this variety of fish poisoning will occur. The problem will continue to be difficult, if more fish is brought in from the South Pacific, until we know the varieties of fishes that are poisonous, the time of year they are edible or poisonous and the locality where the poisonous varieties of fishes are caught.

Fish poisoning due to an inherent toxin causing similar outbreaks has been reported in the literature, particularly in the West Indies area. Walker⁵, Mann⁶, and Gilman⁷ reported in detail the outbreaks in Porto Rico and the Virgin Islands. Patients reported in those outbreaks presented signs and symptoms identical with those seen in the Honolulu outbreak. The same pathognomonic signs and symptoms—vomiting, diarrhea, aches and pains in the joints and extremities, followed by tingling and numbness of the extremities and the feeling of coldness when warm objects are touched as contrasted to the feeling of warmth when cold objects are touched—followed the eating of apparently fresh fish. In this series gastrointestinal symptoms have short duration in comparison to nerve symptoms. Diarrhea lasted only a few hours while nerve symptoms lasted for days.

Gilman⁷ in his review on this subject considered the symptoms of fish poisoning clear cut and pathognomonic. The onset is from one to six hours after eating the fish. The patient appears critically ill, with severe nausea, vomiting and diarrhea. There is a distinct metallic taste (this was not noted in the Honolulu outbreak). The skin becomes flushed and there is tingling and itching that may last for days. Cramps in the extremities may occur. Subsequently there may be reduced or absent knee jerks. Hyperes-

thesia and paresthesia are commonly associated. There may be associated nervousness, restlessness or insomnia. Albumin, casts, and frequency of urination may be noted. The illness may last from one to three weeks with gradual recovery. No fatalities have been recorded.

Walker⁵ and Gudger⁸ in their papers describe, as possible causes for the formation of inherent toxins in the living fish, the eating of poisonous "manchineel" (fruit of the West Indies area), molluscs, zoophytes, corals, medusae, holothurians and protozoans containing a toxin which may be harmless to fishes. In the literature the toxin is described as a toxalbumin (an alkaloid) present in certain living forms in the sea. Walker⁵ uses the term ichthyotoxism to describe fish poisoning in humans following the ingestion of an inherent toxin apparently harmless to the fish.

Steinbach⁹ in his article on fish poisoning in the Marshall Islands in 1893 reported that the natives recognized at that time that certain varieties of fish were toxic to man when caught during some months of the year and in specified areas. The symptoms described by him were headache, nausea, diarrhea, fever at times, and cold hands and feet combined with prickling and numbness.

Of interest in most of the articles is the statement of natives and writers that the larger the fish of the particular specimen that may be a carrier of the toxin, the more dangerous and toxic it is to man. The relation to spawning seasons and infectious diseases in fish are also described as affecting the toxicity of them to man. It is also stated that in certain localities fish caught in one part may be eaten with impunity while the same species caught barely a mile away is regarded as poisonous.

Hermann Sommer, Ph.D. and K. F. Meyer, M.D., in the *California State Department of Health Weekly Bulletin* for April 26, 1941, discuss in detail mussel poisoning, a paralytic form of shellfish poisoning. It is a severe form of food intoxication caused by eating mussels or clams caught off the California coast, particularly at certain times of the year. The State Health Department issues an annual quarantine of mussel or clam fishing during the months of May through November. Up to July 1940, 310 cases of mussel poisoning with 7 deaths and 20 cases of clam poisoning with 5 deaths were reported in California. The original source of the poison here is a plankton which occurs most abundantly in the summer. When they multiply to a concentration of 40 million per liter, the water for miles presents a deep red color and at night a beautiful luminescent spectacle. The poison is an alkaloid belonging to the class of strychnine, muscarine and aconitine, and has been purified to a high degree in the form of its hydrochloride. Tested on mice, it has been found that one millionth of a gram is sufficient to kill the animal. The fatal dose for man

is probably a few milligrams. It is heat stable in acid or neutral solution but is gradually destroyed by boiling with alkali. The mussels ingest the plankton and store the poison in their digestive glands without harm to the mussel. The resulting toxicity is proportional to the number of plankton ingested and to their alkaloid content. The stored poison is slowly excreted by the mussel in a few weeks.

We believe that during certain months of the year certain varieties of fish feeding in shallow waters off the South Pacific atolls may ingest some pelagic plant or animal that contains an alkaloid. The toxicity of the fish will then be dependent on the number of organisms present in the ocean during that period and the degree of ingestion by the fish.

SUMMARY AND CONCLUSIONS

Several dozen cases of fish poisoning caused by eating a variety of sea bass brought in from the South Pacific Islands are reported, 8 of them in detail. It is believed that the etiologic agent is a heat-stable alkaloid present in the apparently fresh fish. The signs, symptoms, and public health implications are described.

There will be no difficulty in keeping the people in Hawaii from eating the well known poisonous puffer or balloon fish. However, every effort should be made to prevent the bringing in or sale of fish, when the natives where the fish are caught know them to be dangerous. The practice of bringing in fish caught on the surface or found on the surface, even though they appear good, should also be prohibited.

Studies and observations should be made by those who have the facilities and trained personnel to classi-

fy and record fishes that may produce fish poisoning in water of the South Pacific and the Hawaiian area.

Physicians and others in this area should be on the lookout for this form of fish poisoning and should report cases or suspected cases to the health department as soon as possible to prevent the development of additional cases.

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A Doctor Looks at Automobile Accidents

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In 1944 Honolulu motorists killed 82 and injured 1866 persons. There were 21 children under 15 years of age among the fatalities. The traffic deaths increased 78 per cent and the casualties 6 per cent over the figures of the previous year. These statistics far exceed the past three years' death and accident tolls of mainland cities with comparable populations.

An accurate analysis of the causes responsible for this enormous rise in the accident rate is difficult to make, as nearly all of them were brought about by a combination of several factors. There is, however, one factor that figures prominently as an important contributory cause in almost every instance. This is the element of human failure. If it is true that "an automobile is no better than the driver who manages it, and the driver is no more efficient than the eyes through which he sees to direct his machine" it seems timely to reexamine the laws governing the granting of driver's licenses in the Territory.

The chief purpose of this discussion is to call attention to the desirability of establishing a systematic examining procedure for licensing private drivers and chauffeurs in Honolulu; it further aims to emphasize the advantages that might accrue from rigid adherence to a few standard physical requirements, conducted by competent examiners.

The recommendations set forth in the following paragraphs are based upon a detailed analysis of the visual requirements, where such exist, of the forty-eight States and Canada and upon the Uniform Traffic Code suggested by the American Association of Motor Vehicle Administrators; they are further based upon the conclusions that were reached from the personal supervision of examinations given to 750 soldiers at Schofield Barracks and the coordination of all these data with problems of strictly local nature gained through membership on the Traffic Safety Commission of the City and County of Honolulu.

The provisions of Section 2650-D, Section 4, Session Laws 1937, read as follows:

"Sec. 2650D, Section 4. What persons shall not be licensed. The Examiners of Chauffeurs shall not issue any license hereunder:

(a) To any person, as an operator or chauffeur, whose license has been suspended, by a court of competent jurisdiction, during such suspension period, nor to any person whose license has been revoked until the expiration of one (1) year after the date of such revocation.

(b) To any person as a chauffeur who is under the age of twenty (20) years.

(c) To any person, as an operator or chauffeur, who has been adjudged an habitual drunkard or an addict to the use of narcotic drugs by a court of competent jurisdiction.

(d) To any person, as an operator or chauffeur, who has previously been adjudged to be afflicted with or suffering from any mental disability or disease and who has not at the time of application been restored to competency by the methods provided by law.

(e) To any person, as an operator or chauffeur, who is required by this Act to take an examination, unless such person shall have successfully passed such examination.

(f) To any person who is required under the provision of the motor vehicle financial responsibility laws of this Territory to deposit proof of financial responsibility and who has not deposited such proof.

(g) To any person when the Examiner of Chauffeurs has good cause to believe that such person by reason of physical or mental disability would not be able to operate a motor vehicle with safety upon the highways; provided, however, that any person denied a license under this or any other section of this Act shall have a right of appeal as hereinafter provided.

(b) To any person, as an operator, who is under the age of fifteen (15) years."

On the basis of the foregoing it is reasonable to assume that any person who does not fall into one of the categories specifically listed above is considered a safe driver and in all likelihood will be granted a license to operate a car in Hawaii. The provisions make no mention of examination of individual accident-prone drivers; neither do they require a periodic reexamination to keep individual drivers' licenses up to date. Yet the accident rates quoted at the beginning of this article indicate that the existing laws are not sufficiently severe and that more legislation may be needed to control the steadily mounting loss of life and limb.

Recognizing the necessity for greater care in the operation of motor vehicles on the highways, the House of Delegates of the American Medical Association at their 1938 annual meeting adopted the following resolutions. The standards set forth were developed by the Section on Ophthalmology, where this program had been under consideration for many years:

RESOLVED, That the following be accepted as the approved American Medical Association standards:

A. For an Unlimited License:

1. Visual acuity with or without glasses of 20/40 Sn. in one eye and 20/100 Sn. in the other.
2. A field of vision of not less than 45 degrees in all meridians from the point of fixation.
3. The presence of binocular single vision,
4. The ability to distinguish red, green and yellow.

5. Night blindness not to be present.
6. Glasses when required be worn while driving and those employed in public transportation provided with an extra pair.

B. Visual Standards for Limited License:

1. Visual acuity of not less than 20/65 Sn. in the better eye.
2. Field vision of not less than 60 degrees horizontally and 50 degrees vertically from point of fixation in one eye.
3. Diplopia not to be present.
4. Glasses to be worn when prescribed.
5. Coordination of eye, mind and muscle to be fully adequate to meet the practical visual road tests.
6. A limited license not to be issued to those employed in public transportation.

C. Renewals, Retesting and Reexaminations:

1. Renewals of license to be issued at least every third year. The applicant shall with each renewal make a declaration that he knows of no visual defect which has developed during the past year.
2. Retesting of acuity to be made at least every six years.
3. If any visual defects have developed, an examination by an ophthalmologist and the report thereof, to be required before reissuing the license.
4. License to state thereon the specific limitation for driving.

In 1944, in response to a request from Army offi-

The minimum ocular requirement for the issuance of a driver's license should be an ability to see not less than 20/60 using both eyes with or without glasses. If the applicant is unable to see 20/60 with both eyes, he should be sent to an eye specialist to have his vision corrected and told to return later for reexamination.

When an applicant returns from an eye specialist and is able to pass the visual acuity test with his new glasses a notation "Must wear glasses while driving" should appear on his driver's license. If his visual acuity cannot be improved beyond 20/60, he should be rejected.

Of the other tests, visual field studies appear to have some real value, although the percentage of the population having a restricted field of vision seems to be very small. The one-eyed driver represents a definite hazard. A person with normal eyes has a field of vision of about 190 degrees. The one-eyed individual on the other hand has a field of between 110 and 135 degrees, depending upon the degree of protrusion of his good eye and the bridge of his nose. He has to learn to compensate for his defect by turning his head and eye from right to left while driving in order to bring possible dangers from the side into the field of clear vision of the good eye.

Tests for color blindness appear to be the least valuable from the practical standpoint. Color blind individuals compensate for their defects by watching

CHART 1. Disposition of Cases on Vision Test

(Adapted from an outline prepared by the American Association of Motor Vehicle Administrators)

20/60 OR BETTER USING BOTH EYES WITHOUT GLASSES	20/60 OR BETTER USING BOTH EYES WITH GLASSES BUT LESS THAN 20/60 WITHOUT GLASSES	20/60 OR BETTER USING BOTH EYES WITH GLASSES BUT 20/60 OR BETTER WITHOUT GLASSES	LESS THAN 20/60 WITH OR WITHOUT GLASSES			
Unrestricted license	Restricted to glasses	Unrestricted license	Sent to eye specialist			
			Re-examined by department			
			Returns with glasses		Returns without glasses	
			20/60 OR BETTER WITH NEW GLASSES	LESS THAN 20/60	20/60 OR BETTER AFTER RECEIVING TREATMENTS, ETC.	LESS THAN 20/60
			Restricted to glasses	Rejected	Unrestricted license	Rejected

cials for a reliable "Driver's Test" for army personnel stationed in Hawaii, the tests outlined by the American Medical Association were recommended and were augmented by two additional procedures.

The first of these, the Stability Test, was used to determine the amount of swaying exhibited by an individual while he was directed to stand still with his eyes closed. The second one, called the Reactometer Test, measured the time required by an individual to apply the brakes of his "car" upon flashing of a warning signal.

In this series any subject who failed any one of the above seven tests was denied a license to drive. However, examinations of this sort are too time-consuming and cumbersome for general adoption.

traffic more carefully, and by discriminating between the relative brightnesses and the various positions of the traffic signal lights.

Tests of binocular vision and depth perception are likewise of small practical importance. At our present speed limits, a driver even with only 90 degrees of binocular vision can perceive a car coming at right angles to him at the same speed within 500 yards, and he will be able to stop within that distance.

Tests for night blindness were of tremendous importance at the time these tests were conducted because of our nightly blackouts. With prewar type of automobile head lights and street lights such tests become of far less value and are not recommended for general use.

Thus it appears that the visual status of an individual is not necessarily a reliable measure of his ability to avoid accidents. The problem is more a dynamic one and involves a test for the coordination of the eye, brain, hands and feet. The reactometer is the only instrument employed during the current investigations that furnished some information about this relationship.

Until instruments similar to the reactometer become widely accepted, we must rely upon the testing of visual acuity measurements as our principal means of weeding out unsafe drivers. Almost as important as the test itself is the knowledge and training of the examiner. If the testing were taken out of the hands of lay personnel and entrusted to workers of the Territorial Sight Conservation Bureau they would become that much more valuable as reliable records; furthermore, these workers, on the basis of their training and experience, would recognize all borderline cases and refer them to competent authority for an unbiased opinion as to their potential dangerousness as future drivers.

Lastly, in keeping with the resolutions of the American Medical Association it would seem advis-

able to require a retesting of visual acuity at least every six years.

The preceding paragraphs are submitted not as a panacea for the prevention of all traffic accidents but as one rational step towards the solution of a major community problem.

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Young Hotel Bldg.



The Use of the Weltmann Reaction in Myocardial Infarction

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Since Oscar Weltmann¹ published his serum coagulation test in 1930 there has been ample recognition of its usefulness in European literature, but in this country it has received scant notice. I have found it of such help in the management of patients with myocardial infarction that I believe it deserves widespread attention. The test yields reliable and valuable information and is simple to perform. A summary of the supposed principles of the test and its technic has been ably presented by Delaney and Keyes²:

Weltmann observed that normal human serum, diluted to fifty times its volume with distilled water, did not coagulate when heated in a boiling water-bath. When tap water was used, or when electrolytes in the form of chlorides of calcium, barium, or magnesium were added to the serum, coagulation occurred upon heating. Inflammatory and exudative processes so altered the serum that coagulation occurred only in solutions containing high concentrations of the electrolytes. Chronic diseases characterized by fibrosis, the healing stages of acute infections, and parenchymal liver damage so changed the serum that coagulation also occurred in the more dilute solutions. On the basis of these preliminary observations Weltmann devised the serocoagulation test. In principle, the test is carried out by boiling in a water bath equal quantities of serum and graduated concentrations of bivalent electrolytes.

Technique

The test is simple to execute, easy to control, and requires little apparatus and material. Simplified modifications and micromethods have been devised. The following is the standard method described by Weltmann. Ten dilutions are prepared in 500 cc. quantities from a stock solution of 10 per cent $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$, namely, 0.1, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02 and 0.01 per cent. These dilutions are numbered from 1 to 10, beginning with the most concentrated. Ten small (Wassermann) tubes are placed in a wire rack and also numbered 1 to 10. Into each are pipetted 5 cc. of the corresponding dilution, and exactly 0.1 cc. of unhemolyzed serum is added. The tubes are shaken to insure mixing of the contents and placed in a boiling water bath. In fifteen minutes the tubes are removed and examined. The highest dilution producing coagulation is observed. Flocculation, rather than turbidity or opalescence, is read as the end point. The number of tubes in which coagulation occurs determines the coagulation band (C.B.) of that particular serum.

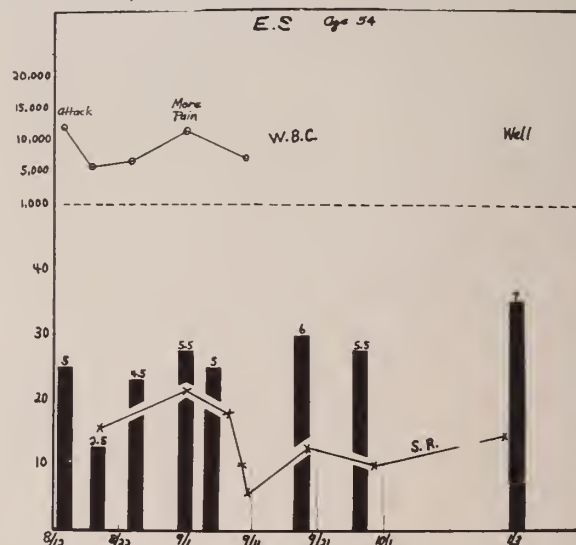
It is worthy of special emphasis that the calcium chloride to be used *must be* $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$. Any other form of the salt will yield extremely erroneous results. There follow three case reports which exemplify the usefulness of the Weltmann reaction in the management of patients with myocardial infarction.

REPORT OF CASES

CASE 1. A university professor, Anglo-Saxon, age 54, was attending a round table discussion when he noticed a

steady pressing substernal discomfort which compelled him to limit his comments and retire from the meeting. He was seen at the office within two hours. He appeared well. His temperature was normal. Blood pressure was 130/70, and physical examination was normal. An electrocardiogram, including three precordial leads, was also normal. The diagnosis of coronary failure (using the term as understood by Blumgart, Schlesinger and Davis³) was made, with the possibility of myocardial infarction in mind. The latter not having been as yet proven, he was allowed to return home and given sedation. Next morning he returned to the office as ordered. At this time his precordial leads showed unmistakable evidence of a recent infarct of the heart and his heart sounds were more distant.

He was immediately hospitalized. His laboratory data during the subsequent six weeks and a later observation three months after discharge, are shown in the accompanying graph, which shows the relationship between serial white counts, sedimentation rates and Weltmann reactions.

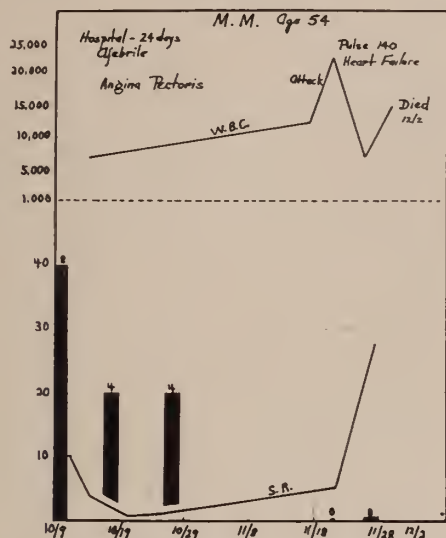


GRAPH 1 (Case 1). The graph shows the course of the white count (WBC), sedimentation rate (S.R.), and Weltmann reaction (solid columns) during the six-week hospital stay, and the findings three months later.

CASE 2. A Russian-born Jewish businessman, age 54, had had symptoms suggesting coronary heart disease for the past year. Three months before these studies were made he had had severe substernal distress while moving some heavy stones about in his garden. He was made to rest for about a week but being of an energetic temperament he was soon up and about in the full tide of an active business life. A cholecystogram had shown gallstones; an electrocardiogram had been normal.

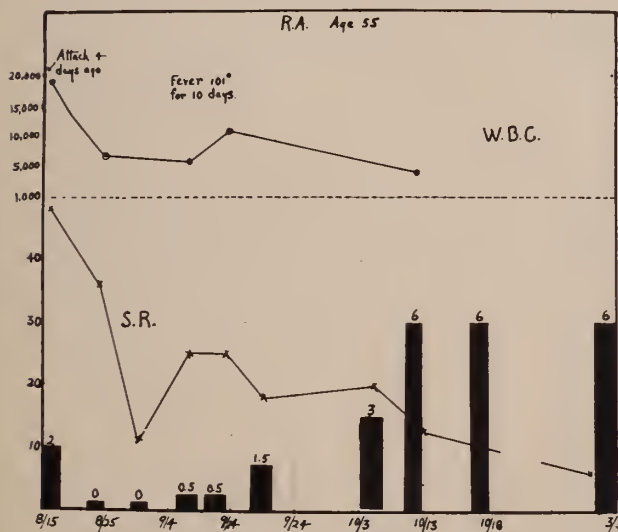
When first seen he had had mild substernal distress on exertion the day before. His Weltmann was C.B. 8, which may have reflected a previous fibrosed infarction or may have mirrored hepatic cell damage associated with gallstones. Sedimentation rate was 10 mm. per hour. He was told to rest at home, but a week later shortly after breakfast he was seized with moderately severe precordial pain, ra-

diating to both shoulders. This was accompanied by most violent activity. He threw himself about the bed and cried out. He was hospitalized and remained in the hospital for twenty-four days. Throughout this period he was afebrile. He never had leukocytosis or an increased sedimentation rate.



GRAPH 2 (Case 2). Note the two findings of a Weltmann of zero during the terminal illness. Autopsy showed a large fresh myocardial infarct.

The graph shows that his Weltmann was C.B. 4 on two occasions. He had several mild attacks of angina even at rest, relieved by nitroglycerin. The presence of gallstones was emphasized by a consultant as a possible factor in his illness. Two electrocardiograms were normal. There was no jaundice. He was then allowed to go home, after twenty-four days in the hospital, with strict orders to rest. These were carried out in moderation. One month later an ex-



GRAPH 3 (Case 3). The laboratory findings during the two months' hospital stay and a follow-up five months later are shown, with white count (W.B.C.), sedimentation rate (S.R.), and Weltmann reaction (solid columns).

tremely severe prolonged attack of substernal pain occurred. Again he was hospitalized but this time his electrocardiogram showed a fresh anterior myocardial infarct. His white count was 24,000, sedimentation rate 28 mm. per hour (Westergren method: normal, 6-10) and Weltmann C.B. 0 (normal 6). After a short stormy ten-day course, with another Weltmann of C.B. 0 on the day before death, he suddenly expired. Autopsy showed a very large myocardial infarct involving most of the lateral wall of the left ventricle.

CASE 3. A 55-year-old Anglo-Saxon liquor store proprietor, while walking, noticed a pressing pain in his chest lasting five hours. Four days later he presented himself for examination. He had a fever of 100 F. and an electrocardiogram showed changes consistent with a recent myocardial infarct. His Weltmann was C.B. 2.

The graph shows the laboratory data during his nine-week hospital stay. The final column records the sedimentation rate and Weltmann five months after discharge. He has returned to work and is well.

DISCUSSION

It is worth repeating that the Weltmann coagulation band will not make a diagnosis. The results must be carefully correlated with the clinical condition of the patient. So far as myocardial infarction is concerned, once the diagnosis is made by other means, *e.g.*, history, physical examination or electrocardiogram, the Weltmann reaction is of extreme value in telling one how large an infarction is present, how long the tissue necrosis persists, and the degree of healing. The graphs above demonstrate some examples of this. In them are shown the relationship of the Weltmann reaction, sedimentation rate, and white cell count. Long after the temperature, white count and sedimentation rate have returned to normal the Weltmann may give incontrovertible proof that the area of infarcted muscle is not yet healed and that the patient had best remain as quiet as possible for a while more.

The pioneer work of Levinson⁴ in this country in 1935 in the study of the Weltmann reaction has gone almost unnoticed. Fennel⁵, in 1937, noted its value. Since then Dees⁶, Schweinburg⁷ and others have published studies on its use. Dees⁸ carried out experiments in an effort to solve the mystery of its physicochemical principles. She and others have shown that plasma proteins, pH, electrolytes and bilirubin have nothing to do with the reaction. Blood calcium level does affect the band slightly. Dees advances interesting evidence that serum lipids may be the determining factors, and points out that blood fatty acids are often lowered in acute infections.

In this short report the value of the Weltmann reaction is illustrated only in myocardial infarction. It is to be remembered that it is also of value in other conditions. Diseases characterized by inflammation and tissue breakdown such as pneumonia, active rheumatic fever, tuberculous peritonitis, and acute suppurative appendicitis show a shortening or shift to the left of the coagulation band. On the other hand,

diseases in which there is parenchymal liver damage or fibrosis such as healing tuberculosis will show a prolonged coagulation band or a shift to the right. An excellent discussion of the use of the Weltmann reaction in differential diagnosis is given in the new edition of "Clinical Laboratory Diagnosis" by Levinson and MacFate⁹.

In conclusion, it should be stated that this paper is largely a confirmation of the work of Delaney and Keyes. Their paper was published in a journal whose readers are largely specialists. This is true of most of the papers in this country regarding the Weltmann reaction. Because myocardial infarction is common in general practice it is felt that this valuable aid in its management should be presented to the general medical practitioner.

An expression of thanks is made to Dr. E. A. Fennel for his help in the preparation of this paper and to Dr. I. L. Tilden for making the graphs.

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HAWAII MEDICAL JOURNAL

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EDITORIALS

PHYSICAL FITNESS TO DRIVE A CAR

Is everyone physically capable of driving a car? Obviously, the answer is no. Hawaii's laws provide that persons known to be physically unfit shall not be issued a license to drive.

But suppose such a physically unfit person has applied for a license to drive—and been given it—*before he or she became physically unfit*? There is no provision, as things now stand, for revoking such a person's license until and if some serious accident occurs. We ourselves were licensed to drive in Hawaii in 1928; a duplicate license was issued to us on request in 1939; and on neither occasion was any test of visual acuity made. If we were now half blind we would still be legally privileged to drive a car in spite of it.

This is a dangerous way of doing business. A man who is able to pass a practical driver's examination at the age of 18 may be grossly unfit to drive a car by the time he is 40. Some step should be taken to insure the cancellation of his license to drive within a reasonable period after the beginning of his disability.

The two steps seem so obvious that it should hardly be necessary to suggest that they be taken. One of them is urged elsewhere in this issue of the JOURNAL: test would-be drivers' visual acuity and require them to meet a minimum standard. The other—already in force in many states—is to require renewal of drivers' licenses every three to five years.

portant sources of incapacity and death; and both of them can be controlled and eradicated by methods now known and in our hands.

The first step is obviously to discover all the cases of both diseases. For tuberculosis this would require chest x-rays of virtually everyone in the Territory. This is a big job, but—in view of the new miniature film technique and the increasing popular realization of the importance and desirability of chest x-rays—not an impossible one. Industrial surveys, plantation surveys, and health department surveys of special groups, may well accomplish virtually complete coverage of the Territory within the next few years. A bold, frank policy of *advertising* the need of such chest x-rays at intervals—after the medical profession and the Board of Health understand each other on this program—might reach many individuals not included in the special groups mentioned.

For case-finding in syphilis, general application of serologic tests for the disease is required. In Alabama this has been required by law for everyone between fourteen and fifty. The law seems to have been favorably received by the public—a circumstance which is almost essential to the success of any such measure. We now have such a law in Hawaii for pregnant women, and it is to be hoped that the next legislature will pass a similar law for persons planning to be married. The latter type of law is now in force in some thirty states.

The second step in a program of eradication of these diseases is to prevent all discovered cases from transmitting their infection to anyone else. For syphilis, we have ample treatment facilities, both private and public, wherewith to accomplish this. For tuberculosis we do not—for the isolation and treatment of tuberculous patients requires sanatorium beds, and we have not enough of these in the Territory. In spite of this circumstance, some degree of protection of others can be obtained even in homes, if all infected persons can be identified and educated; so the lack of

LET'S ELIMINATE TUBERCULOSIS AND SYPHILIS

Two of the most serious and readily preventable diseases we have in the Territory of Hawaii are tuberculosis and syphilis. Both of these diseases are im-

hospital facilities should not stop us from finding as many cases as possible.

Tuberculosis and syphilis are discoverable and preventable, and their occurrence in any community is really a matter of negligence. We have virtually eradicated smallpox; we have virtually eradicated diphtheria; we have virtually eradicated typhoid fever; and we can virtually eradicate tuberculosis and syphilis. Let's go ahead and do it!

C. L. WILBAR, JR., M.D.,
President, Board of Health

PATHOLOGISTS' MEETING

The Hawaii Society of Clinical Pathologists held a seminar meeting on the evening of Dec. 1, 1944, at Tripler General Hospital, Farrington Division. Slides from 7 cases previously mailed to the men attending were projected upon a screen and the cases discussed. Following the meeting refreshments were served by the Army. The following men were present: Lt. Col. C. S. Moran, M.C., A.U.S., Cmdr. E. J. Losli, M.C., U.S.N.R., Dr. Sumner Price, Dr. Thomas Chang, Capt. Henry S. Bernet, M.C., A.U.S., Lt. Col. Tell Nelson, M.C., A.U.S., Major Henry E. Davidson, M.C., A.U.S., Capt. Fred Dick, Jr., M.C., A.U.S., Capt. William Levison, M.C., A.U.S., Dr. E. A. Fennel, Cmdr. O. A. Brines, M.C., U.S.N.R., Cmdr. K. Fowler, M.C., U.S.N.R., Dr. M. Barnes, Dr. I. L. Tilden, Lt. Col. Carl F. Tessmer, M.C., A.U.S., and Major David Adler, M.C., A.U.S.

DERMATOLOGISTS' MEETING

The Hawaii Dermatological Society met on the afternoon of December 9, 1944, at 881 South Hotel Street. Ten dermatologic cases were presented and discussed. Present were Dr. Harold M. Johnson, Dr. Harry L. Arnold, Jr., Major David Musman, M.C., A.U.S., Captain L. H. Rosenthal, M.C., A.U.S., Captain Herbert Lawrence, M.C., A.U.S., Captain Fred Licks, M.C., A.U.S. (by invitation), and Captain Irving N. Holtzman, M.C., A.U.S. (by invitation).

The next meeting will be held on March 10, 1945, at the same location. Notification will be made by post-card on request. Requests should be directed to Dr. Arnold, Jr., at 881 South Hotel Street.

COMBINED DIPHTHERIA-TETANUS TOXOID

A recent Board of Health communication quite properly urges all physicians to give children the combined diphtheria and tetanus toxoid instead of the plain diphtheria toxoid. Like the latter, this combined toxoid is to be given at nine and again at eleven or twelve months of age.

The advantage of this lies chiefly in the fact that it will eventually make it possible to give tetanus toxoid booster injections to children exposed to the risk of tetanus, instead of using the relatively ineffective tetanus antitoxin. As matters now stand, it is rarely possible to be sure that a child has had the basic immunizing injections of tetanus toxoid, and consequently it is not safe in most cases to use the toxoid booster injection.

A glance at tetanus morbidity and mortality statistics will suffice to show why a change is needed. In the past ten years, there has been no significant decline in these figures. In Hawaii, every month, about two persons develop tetanus, and one of them dies of it. Plainly, the antitoxin is not effective enough. We believe that the toxoid will prove more effective, but if it is to get a chance to reduce the incidence and the mortality if the disease, it must be more widely employed than is now the case.

The protection against diphtheria afforded by this combination is just as great as that afforded by diphtheria toxoid alone. The combined preparation simply permits an effective action to be taken against two different diseases by the injection of a single preparation. There can be no excuse, and no reason but indolence or ignorance, for failing to take advantage of this procedure in every case in which it is not specifically contraindicated.

DR. JOHN BURDEN HONORED

It has recently been announced that Major John A. Burden, A.U.S., formerly physician for Baldwin Packers on Maui, was awarded the Bronze Star by General Joseph W. Stilwell in a ceremony held at C-B-I Forward Echelon Headquarters. A dispatch from Washington also stated that Dr. Burden had been presented the Legion of Merit medal for meritorious service against the Japanese at New Georgia and Vella Lavella islands. Dr. Burden also holds the Purple Heart awarded in January 1943, and the Silver Star awarded on March 18, 1943.

CLINICAL NOTES

SURVEY OF BOOTBLACKING ACTIVITIES IN HONOLULU AND WAHIAWA*

A brief investigation of the shoe polishing or boot-blackening activities as practiced on the island of Oahu has revealed the following data.

Specific Hazard Found Existent

There are at present approximately 780 persons engaged in this activity, ranging in age from 10 to 22 years. The work of these young people deals almost entirely with shoes while they are being worn.

Of the above total, 128 were contacted and about 46 per cent were found to carry shoe dyes for use in their work. In each instance the manufacturer's instruction as found on the bottles stated that the shoes must be removed before dyeing and allowed to dry for from twenty-four to thirty-six hours before again being worn. All bootblacks found carrying dyes were working within the city limits of Honolulu. At Wahiawa and other locations, bootblacks stated that attempts had been made to buy a similar dye but none was for sale in their local market.

Analysis of Shoe Dye Found in Use

Laboratory analysis was as follows:

Nitrobenzene	11%
Ethyl Alcohol	65%
Coloring agent and Impurities.....	23%

The hazardous portion of the above mixture is represented by the nitrobenzene, a dangerous lipoid poison. Cases resulting from skin contact are more numerous in literature than those reported through inhalation, although acute symptoms can result from either, as well as from the combined influence of both. The symptoms result from its influence on the blood, and too, its direction action on the central nervous system.

Symptoms of Nitrobenzene Poisoning From Shoe Dye

This is usually characterized by marked cyanosis, sometimes accompanied by vertigo and weakness, digestive disorders, headache and somnolence. Some deaths have been reported.

Numerous instances of poisoning from nitrobenzene have been reported from many parts of the world. Here in Hawaii, abstracts of data pertaining to poisonous dyes in shoe preparations were compiled in 1937 in order to substantiate three cases of serious illness which occurred here at that time. In this instance, service personnel while on leave had their

shoes dyed at the same stand, walked about in them, and then attended a moving picture show. All three were overcome sometime after leaving that establishment, their symptoms becoming progressively worse.

An article in the *Journal of the American Medical Association*, volume 84:1987-1991 (June 27, 1925), indicates that minute amounts of this substance have been known to cause symptoms and points to instances where laundry inks containing nitrobenzene used to mark diapers caused cyanosis in children.

This article states also that most American manufacturers of shoe dyes use nitrobenzene because of its low cost. Listed also are additional data in regard to shoe dye poisoning cases previous to that date. Other articles have since added to the list of cases that have become matter of record. Reference is made by Kober and Hayburst, in connection with excessive nitrobenzol used in certain products, to hemoglobinuria and severe poisoning having been caused "such as we have repeatedly seen from the use of shoe polish . . ."

Present Additional Contributing Factors

According to the shoe shine boys that were questioned, the volume of their business is distributed as follows: (1) army personnel, (2) navy personnel, (3) the civilian group.

A fairly large proportion of the army personnel were reported as wearing high shoes, thus increasing the amount of dye which might be applied.

Many of the shoes polished were reported as being quite badly scuffed. Money being relatively plentiful and tips good, the youngsters smeared the shoes liberally with dye in order to improve the shine by deepening the color. None of those interviewed had ever received instruction on shoe polishing, let alone dyeing.

The present method of dyeing and polishing tends to increase the hazard to the wearer. The dye is used "when they ask for it," which is in about 30 per cent of the Honolulu shines, and is followed almost immediately by a waxing compound. This tends to seal off, to some extent, the otherwise possible outward evaporation effect.

Because of the present traffic load and certain other factors, customers often cover quite extensive distances on foot, thereby increasing moisture within the shoe and on the shoe lining, and increasing the possibility of the solvent's reaching the skin surface.

* By Division of Industrial Hygiene, Board of Health.

Then again, many adults are using alcoholic beverages to some extent, and Hamilton and others have shown that alcohol, not necessarily in excessive amounts, can greatly accelerate and intensify the effects from nitrobenzene contact. Ordinarily, symptoms are not noticeable until quite some time after the chemical has made contact with the skin.

Observations Regarding Possible Effect on Bootblacks

The shine boys were found protected to some extent by the following:

A. The fact that a dauber placed on a wire stem was used to make the application.

B. The accumulation of wax on their hands from the polishing operation helped to seal off contact from the dye that might otherwise reach the fingers. Very little discoloration was noted on their hands. The fact that only 30 per cent of the shoes polished in Honolulu are dyed would help to maintain this wax protection on their hands.

FREDERICK A. SCHRAMM
Chief, Industrial Hygiene Division
Board of Health



NEUROPSYCHIATRIC COMMENT

THE FUNCTION OF THE PSYCHIATRIC SOCIAL WORKER IN A GENERAL HOSPITAL

To the general hospital comes a large group of individuals, both children and adults, for whom the science of medicine has not been able to effect a complete cure. "Study of general hospital admissions has shown uncomplicated organic disturbances to be the difficulty in only one-third of all admissions. In another one-third of general hospital patients, the illness is partially due to organic disturbances and partially due to physiologic or emotional reaction to difficulties in the field of personality. In another one-third of general hospital patients, thorough examinations failed to reveal any organic disorder whatever and established the fact that these individuals were presenting physiologic disorder as a result of personal difficulties¹." Accordingly, two-thirds of the patients coming to the general hospital present somatic complaints, usually of such a nature as to make it difficult for them to carry on their daily living responsibly and productively within the family and community. They present psychiatric problems. With dislocations of normal family living, exacting and long hours or work, and general emotional pressures of today this group is becoming larger. A further increase is being and will continue to be found as our veterans return, many with a diagnosis of "psychoneurosis" whose complaints are chiefly somatic in character². Since the strength of a nation lies in the health, physical and emotional, of its children and adults, it is the concern of everyone that this problem be met as effectively as possible.

Because such illnesses have not responded entirely satisfactorily to medical treatment, research has been developed in the field of psychosomatic medicine. It is now being recognized that the emotional element plays some etiological role in these illnesses, varying in importance with the individual. There is greater awareness of the related functional needs of an individual; in other words, greater awareness of the need for a psycho-biological approach to illness.

The Position of Psychiatric Social Service

Recognizing the importance of treatment of the related needs (that is, physical and psychological) of individuals, a few general hospitals have employed, as a part of the hospital service, a psychiatrist and a psychiatric social worker. More often, due to the lack of psychiatrists, we find the psychiatric social worker employed by the hospital. (In such instances supervisory services of a community psychiatrist should be available for the worker's use.)

As would be expected, psychiatric social work began (as did psychiatry) in mental hospitals. Boston Psychopathic pioneered, beginning and developing a training during the decade of World War I, 1910-1920. Psychiatrists were aware that many patients could have been helped to get well more quickly and could have been protected from relapses if there had been better understanding of and help given in the area of their daily lives and daily work-help in the area of their living relationships. However, the psychiatrist did not have time to develop this approach, nor did he have time to get adequate social histories to better understand the patients' illnesses. Thus, the psychiatric social worker became the means for extending the services of the psychiatrist. Today, these contributions promise a social value which reaches far into the educational field of prevention of illnesses and maintaining better mental health as well as into that of general social progress.

Training for Psychiatric Social Service

It might be well to review briefly how people are trained for this work. The psychiatric social worker has two years of professional training in a graduate school of social work, giving a Master's degree. Usually the training includes eighteen months of supervised experience, nine of which are in a family or children's agency or psychiatric clinic for adults or children. Besides casework, courses in the training include: medical information, community organization, economics, sociology, government, child welfare, nature of human behavior, social psychiatry, advanced psychiatry, psychopathology and clinical demonstration in a mental hospital.

Functions of the Psychiatric Social Worker

The psychiatric social worker does not do psychotherapy as does the psychiatrist. In other words our task is not to bring about fundamental personality changes but to help individuals to use their own personality strengths to live more responsibly and productively within their family and community relationships.

Returning now, specifically, to the function of the psychiatric social worker in a general hospital, it is obvious that some of the "two-thirds of the general hospital patients" will need psychotherapy if they are to get well, but a great many can use psychiatric case work service advantageously. The psychiatric social worker is trained to recognize factors in the life situation of individuals which may be producing physical symptoms. Most of us are familiar with

the example of the person suffering from a stomach upset, the basis for which lies in a marital difficulty. We are familiar with the child who is enuretic at home and not in the hospital. The worker is trained, too, to recognize early signs of emotional disturbance which may lead to more serious maladjustment if the individual's living situation remains as it is. So, too, is the worker trained to recognize factors in the individual's life situation which may be detrimental to his recovery. I think of the eleven-year-old boy who had spent most of four years in and out of a hospital because of a very severe case of eczema. He had scarcely ever attended school. His mother was dead and his father took him home intermittently, only to bring him back to the hospital. Over a period of six months' time the social worker helped this boy to adjust to the more or less casual interest his father had in him and helped the father to consider foster home placement as offering more of a home for the boy, thereby meeting more of his emotional needs. When a satisfactory placement was effected, the father was able to show more interest in the boy because he did not have to carry a responsibility that was more than he could handle. The foster mother and the boy carefully followed the medical treatment prescribed. Both were delighted when the eczema began to clear. At the end of five months the eczema had cleared entirely and two months later the boy was enrolled in school with some tutoring so he could go into a class more nearly his own chronological age group. There is no way to know why the medical treatment was successful at this time, but we do know that it had not been successful previously. Might we consider the possibility that a more emotionally satisfying living situation made it possible for the medical treatment to be more effective?

The physician's use of the service of a psychiatric social worker in a general hospital makes it possible for many persons to be helped who, otherwise, may continue to have "hospitalitis," and who may go through life unable to assume average mature responsibility, unable to find pleasure in healthy living. The physician is in a peculiarly advantageous position since these persons are asking for help by coming to the hospital. They bring an attitude of confidence in their doctor, providing him an opportunity to refer them to another professional person who offers a service which may help them. Being referred by the doctor in whom he has confidence may make it less hard for an individual to accept the cause of his illness as not physical. Therefore, the doctor's interpretation of this service is important. This is not always easy. However, as a child has confidence in and respect for the inherent authority of a parent, so does the patient have confidence in and respect for the knowledge of the physician. This knowledge is backed by laboratory findings which establish

the existence of organic pathology. The physician who is referring a patient to a surgeon can say the surgeon knows how to remove a gall bladder. When referring a patient to a psychiatrist or a psychiatric social worker there is nothing so tangible to contribute. Instead, the physician, himself, must believe in the knowledge and experience of another professional person offering a service which is helpful to the patient, but which does not use medicine or surgery. Saying the psychiatric social worker will "fix you up" doesn't answer. It isn't always true. Some patients are not helped. The patient needs some direction to consider using help to change his situation, to make a more adequate adjustment. The physician, in explaining the service and the need for the patient's cooperation, gives him an opportunity to have a more active part in accepting psychiatric service. Slowly we are recognizing that emotional illness is just as *real* as physical illness. It can be just as great a handicap to an individual. Associated with it is still a stigma which is no longer so with physical illness, but the physician can utilize the patient's confidence in him to be reassuring that it is an illness which can be helped. Therefore, the physician's attitude about emotional illness is important; his attitude about psychiatric service is important. If he feels a confidence in its validity, the patient is helped to consider using it. Referral for psychiatric service does not affect the physician's relationship with the patient.

Another type of services offered by the psychiatric social worker is to members of hospital personnel. Industry has spent time studying the values of such a service to its personnel. Literature now available shows increasing plans for and use of it. Sometimes this is on an individual basis; at other times as a part of planning better relationships and management.

Psychosomatic medicine is comparatively new. The emotional element in physical illness is just beginning to be considered. The well trained, well equipped psychiatric social worker has a very real and important contribution in case work to bring to this field. Its effectiveness will depend to a large degree on whether it merits and gains the confidence of physicians.

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MILDRED SIKKEMA

COUNTY SOCIETY REPORTS

HAWAII COUNTY MEDICAL SOCIETY

The semi-annual meeting was held at the Country club in October, sponsored by the doctors of Hilo. The business meeting was dispensed with at that time.

The 232nd regular meeting of the Hawaii County Medical Society was called to order by the President, Dr. M. H. Chang, at 8:15 P.M., November 9 in the Library of the Hilo Memorial Hospital.

A letter from Dr. Kepner, Chairman of the Committee on Psychiatry and Neurology of the Hawaii Territorial Medical Association, in reference to the Legislative Acts regarding psychiatric problems, was read. Dr. Patterson moved that it be referred to the Legislative Committee for further study. This was carried unanimously.

Dr. Leslie stated that he would appreciate it if Puumale Hospital were given advance notice of patients to be admitted to the hospital. He also reported that all plantations are in favor of having the 4x5 film chest x-ray survey.

H W. KURASHIGE, M.D.,
Secretary pro tem

HONOLULU COUNTY MEDICAL SOCIETY

Meeting November 17, 1944. Dr. Halford presided; about 150 were present. Dr. Halford introduced General John Willis, who is the new chief surgeon of the Pacific Ocean Areas. At this meeting the Honolulu County Medical Society honored the Territorial Association of Plantation Physicians, who were holding their first annual meeting. The program had been planned by the Plantation Physicians' Association.

Program:

1. Critical Analysis of Medical Economic Problems in Hawaii—M. H. LICHTER, M. D.
2. Aims and Aspirations of the Territorial Association of Plantation Physicians—H. M. PATTERSON, M.D.
3. Some of the Medical Lessons Learned in World War II—Army—LT. COL. H. L. MELTZER, M.C., A.U.S.
4. Some of the Medical Lessons Learned in World War II—Navy—COMDR. W. HOBBY, M.C., U.S.N.
5. Some of the Surgical Lessons Learned in World War II—Navy—CAPT. H. K. GRAY, M.C., U.S.N.

6. Some of the Surgical Lessons Learned in World War II—Army—COL. FORRESTER RAINE, M.C., A.U.S.

Meeting December 15, 1944. Dr. Halford read a resolution, passage of which was necessary before the Medical Library could be incorporated to expedite the handling of funds. Upon motion by Dr. Arnold, Jr., seconded by Dr. Benyas, it was voted to pass the resolution.

Upon motion of Dr. Pinkerton, seconded and amended by Dr. Batten, the industrial accident fee schedule was adopted as proposed, with the exception of the x-ray items. It was voted to give the Workmen's Compensation Committee full power to negotiate with the insurance companies for a 15 per cent surcharge over x-ray fees as proposed in the new schedule, and if this is not satisfactory to the insurance companies, to make the best settlement possible.

M. GORDON, M.D.
Recording Secretary

KAUAI COUNTY MEDICAL SOCIETY

Meeting of November 8, 1944. Members present were Doctors Chisholm, Liu, Boyden, Wallis, Chang, Harris and Hata.

Dr. Wallis, chairman of the committee on the Hawaii Medical Service Association plan, read two letters which he had received from Mr. Carter, executive official of the H.M.S.A., stating that encouraging progress was being made against obstacles slowing up the inauguration of the plan on Kauai. Dr. Wallis announced that he had a copy of the annual report of the H.M.S.A. which would be available to any doctor wishing to read it.

Dr. Chisholm appointed Dr. Hata as chairman of the program committee, the latter position being unfilled due to the recent death of Dr. Betsui.

Dr. Liu informed the members of the action taken by him in sending condolences and flowers to Mrs. David Betsui on the occasion of her recent bereavement, the death of Dr. Betsui.

DAVID LIU, M.D.,
Secretary



THIS IS THE GROUP OF 83 2ND LIEUTENANTS DIRECTLY COMMISSIONED in the Medical Administrative Corps for service in the Pacific Ocean Areas. Seated before the successful candidates are the faculty of the specially established school who prepared these officers for their new responsibilities. Seated from left to right are: Capt. Joseph J. Kopec, company commander of group; Maj. Albert E. Del Negro, post commandant; Maj. Paul E. McFarland, director of training; Capt. Russell M. Webb, and 1st Lt. Robert A. Schenkel, platoon leaders for class. (U. S. Army Signal Corps photo.)



BRIG. GEN. JOHN M. WILLIS, SURGEON FOR ARMY FORCES IN PACIFIC OCEAN AREAS, CONGRATULATES FIVE WARRANT OFFICERS AND 78 ENLISTED MEN ON RECEIVING DIRECT COMMISSIONS AS 2ND LIEUTENANTS IN THE MEDICAL ADMINISTRATIVE CORPS. Group attended a special course conducted by Medical Service, Central Pacific Base Command, concentrating 17 weeks Officer Candidate School work into six weeks, and is largest single group to receive direct commissions in POA at one time. Facing you, from left to right, are: Gen. Willis (standing); Col. Paul H. Streit, CPBC Surgeon; and Maj. Paul E. McFarland, director of training. (U. S. Army Signal Corps photo.)

LIBRARY NOTES

THE HONOLULU COUNTY MEDICAL LIBRARY

MRS. ETHEL HILL, Librarian

MISS DORIS T. YASUTAKE, Library Assistant

Phone 65370

Open daily, except Sunday—8:00 A.M. to 4:30 P.M.—
7:30 P.M. to 9:30 P.M.

Loan privileges are extended to all members of the Hawaii Territorial Medical Association, the Nurses Associations, and Army and Navy medical officers.

Loan books are all books in the Library, with the exception of the reference volumes, and the rare and historical collection.

Loan journals are all journals in the Library which are over six (6) months old (except bound volumes).

Fines are five cents (5c) per day for each book or journal kept over the loan period of ten (10) calendar days.

Lost and unreturned books and journals are billed at twice their cost.

Recent Acquisitions

By purchase:

Armstrong, H. G. *Principles and practice of aviation medicine*. 1943.

Bercovitz, Z. T., ed. *Clinical tropical medicine*. 1944.

Glaister, John. *Medical jurisprudence and toxicology*. 7th ed. 1942.

The Merck manual. 7th ed. 1940.

By gift of authors:

Dr. Arthur E. Hertzler. *Diseases of the thyroid gland*. 1941.

Dr. Arthur E. Hertzler. *Grounds of an old surgeon's faith*. 1944.

Dr. Arthur E. Hertzler. *Ventures in science of a country surgeon*. 1944.

Dr. Otto Saphir. *Outline of tropical medicine*. 1944.

From DR. GARTON E. WALL

American Journal of Obstetrics and Gynecology

Annals of Surgery

Digest of Treatment

New England Journal of Medicine

Surgery, Gynecology and Obstetrics

From DR. DONALD C. MARSHALL

Journal of Pediatrics (missing copies)

From DR. KYURO OKAZAKI

American Journal of Digestive Diseases

From REAR ADMR. LUCIUS W. JOHNSON

A.M.A. Hosp. Ass. *Hospital accounting and statistics*. 1940.

From DR. H. C. GOTSHALK

American Journal of the Medical Sciences (missing copies)

New England Journal of Medicine

From DR. ROGERS LEE HILL

Annals of Surgery (missing copies)

From DR. CLARENCE J. GAMBLE

Human Fertility (subscription)

From Palama Settlement

Plantation Health Bulletin (missing copies)

From the University of Hawaii Library

Archivos De Lepra (missing copies)

From the University of North Carolina Medical Library

North Carolina Medical Journal (missing copies)

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From University of Buffalo, School of Medicine

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From the New Orleans Medical and Surgical Journal

New Orleans Medical and Surgical Journal (missing copies)

* * *

The *Quarterly Cumulative Index Medicus* indexes by author, subject and title all important medical journals. It is published at quarterly intervals, with bound volumes appearing semi-annually. The file in the Medical Library is complete from 1922 to date.

The *Index Catalogue of the Library of the Surgeon General's Office (Third Series)* dates back to 1918, and covers both books and journals from approximately 1900 to date. This index is arranged in volumes from A to Z, and one volume appears each year. We have recently received volume I-J of the fourth series. This index is more complete in its coverage than the *Index Medicus*, and a more valuable reference work, but the arrangement delays publication.

The *Current List of Medical Literature* is published at weekly intervals, and is arranged numerically by

subject. Any doctor who wishes to locate an article or articles which have appeared in medical journals can do so by calling the Medical Library and requesting this service.

* * *

Following is a list of incomplete journal files, not being currently received in the Library. Any doctor who has issues which will help build up these holdings will be doing the Library a great service. This Medical Library, situated relatively close to the Orient, has need of any copies of Japanese, Chinese, Indian, Philippine or Indonesian medical journals. Our growing concern with tropical medicine will make this material an important and necessary part of our library development.

Acta Japonica Medicinae Tropicalis
 American Journal of Cancer
 American Journal of Clinical Pathology
 American Journal of Hygiene
 American Journal of Obstetrics and Diseases of Women and Children
 A.M.A. Woman's Auxiliary Bulletin
 American Medicine
 Annales De Instituto Pasteur
 Annals of Ophthalmology
 Annals of Tropical Medicine and Parasitology
 Archivos De Lepra
 Archives De Medicine Navale
 Archives of Ophthalmology
 Archives of Otolaryngology
 Archives of Pathology
 Archives of Pediatrics
 Archives of Surgery
 Ars Medici
 Bacteriological Reviews
 Berliner Klinische Wochenschrift
 British Journal of Ophthalmology
 Bulletin of the American Society for the Control of Cancer
 Bulletin of the Johns Hopkins Hospital
 Bulletin of Practical Ophthalmology
 Bulletin of the Quezon Institute
 Bulletin of the School of Medicine, University of Maryland
 Calcutta Medical Journal
 Chinese Medical Journal
 Clinics of John B. Murphy
 Collected Papers of the Harvard Medical School
 Collected Papers of the Mayo Clinic
 Collected Reprints from the George Williams Hooper Foundation for Medical Research
 Comptes Rendus Hebdomadaires Des Seances De L'Academie Des Sciences.
 Comptes Rendus Hebdomadaires Des Seances Et Memoires De La Societe De Biologie
 Current Medical Digest
 Current Researches in Anesthesia and Analgesia
 Deutsche Medizinische Wochenschrift
 The Diplomat
 Endocrinology
 Handbuch Der Pathogenen Mikroorganismen
 Indian Journal of Medical Research

Indian Medical Gazette
 Indian Medical Research Memoirs
 International Clinics
 International Journal of Leprosy
 International Nursing Review
 Jahresbericht Pathogenen Mikroorganismen
 Japanese Journal of Experimental Medicine
 Journal of Anatomy and Physiology
 Journal of Bacteriology
 Journal of Hygiene
 Journal of Immunology
 Journal of Infectious Diseases
 Journal of Medical Research
 Journal of the Michigan State Medical Society
 Journal of the Mount Sinai Hospital
 Journal of Nervous and Mental Disease
 Journal of Nutrition
 Journal of Ophthalmology, Otolaryngology, and Laryngology
 Journal of Pathology and Bacteriology
 Journal of Pediatrics
 Journal of Pharmacology and Experimental Medicine
 Journal of Philippine Islands Medical Association
 Journal of Tropical Medicine and Hygiene
 Laryngoscope
 Lepra
 Lepra Bibliotheca Internationalis
 Leprosy in India
 Leprosy Review
 London Medical and Surgical Journal
 Mededeelingen Van Den Dienst Der Volksgezondheid in Nederlandsch Indie
 Medical Age
 Medical Clinics of Chicago
 Medical Era
 Medical Life
 Medical News
 Medical Record
 Medical and Surgical Reporter
 Memorias Do Instituto Oswaldo Cruz
 National Journal of China
 Ohio State Medical Journal
 Ophthalmic Record
 Otolaryngology, Rhinology, and Ophthalmology
 Pacific Coast Journal of Nursing
 Pan Pacific Surgical Conference Proceedings
 Parasitology
 La Presse Medicale
 Proceedings of the American Nurses Association
 Proceedings of the Wheeling Clinic
 Quarterly Bulletin of the Sea View Hospital
 Radiography and Clinical Photography
 Reports of the Johns Hopkins Hospital
 Revista Brasileira De Leprologia
 Revista De Cirurgia
 Revue Belge Des Sciences Medicales
 Rhode Island Medical Journal
 Science
 La Semaine Medicale
 Studies from the Rockefeller Institute for Medical Research
 Surgical Clinics of Chicago
 Therapeutic Gazette

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|--|--|
| Therapeutic Notes | Tropical Diseases Bulletin |
| Therapie Der Gegenwart | Zeitschrift Fur Hygiene |
| Tohoku Journal of Experimental Medicine | Zeitschrift Fur Hygiene und Infektionskrankheiten |
| Transactions of the Royal Society of Tropical Medicine and Hygiene | Zeitschrift Fur Immunitatsforschung |
| Transactions of the Western Section of the American Urological Association | Zeitschrift Fur Immunitatsforschung Und Experimentelle Therapie |
| | Zentralblatt Fur Bakteriologie, Parasitenkunde Und Infektionskrankheiten |



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REG. U. S. PAT. OFF.

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¹Meyer, E., and Arnold, L., 1938, *Amer. Digest. Dis.*, 5:418.

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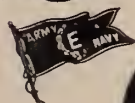
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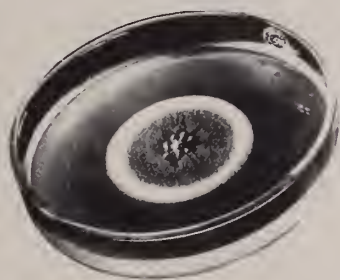
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'Dexin' Reg. Trademark



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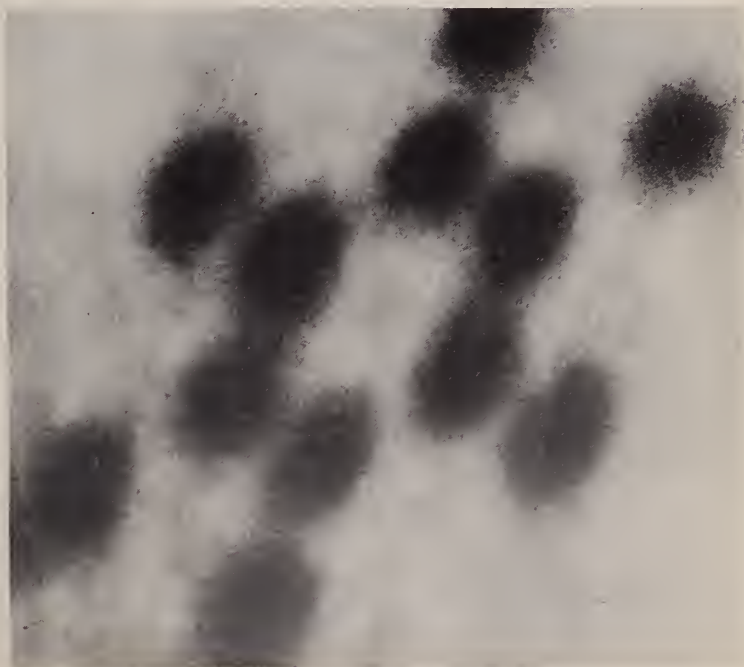
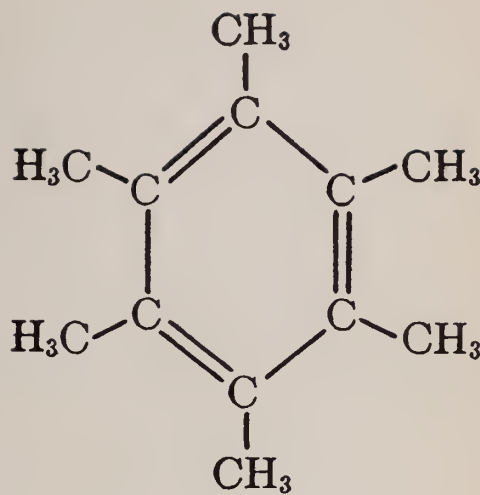
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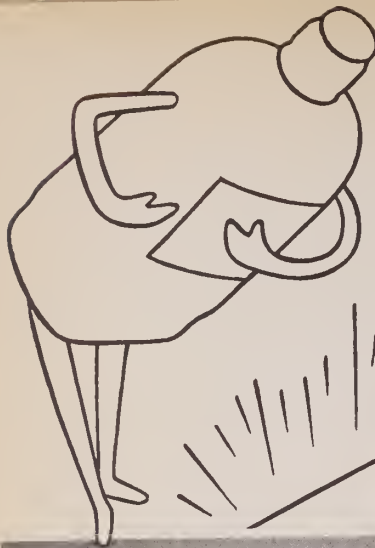
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**Proc. Soc. Exp. Bio. and Med., 1934, 32, 241-245.*

***Laryngoscope, 1935, XLV, No. 2, 149-154.*

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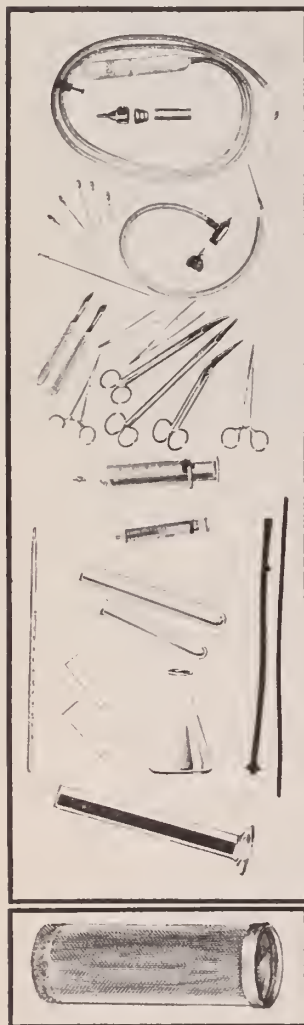
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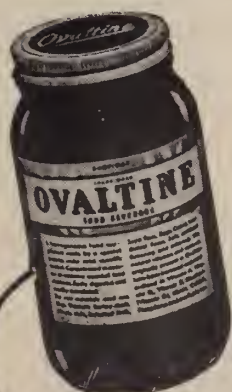


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Code of Ethics and Discipline

(Adopted at A P A Convention, Atlantic City, June, 1935)

I. PROFESSIONAL PRACTICE

- Diagnosing, stating of the prognosis of a case, and prescribing of treatment shall be entirely the responsibility of the physician. Any assumption of this responsibility by one of our members shall be considered unethical.
- The patient shall be referred back to the physician for periodical examinations.
- A member shall not attempt to criticize the physician or dictate technique or procedure.

II. ADVERTISING

- Members shall not procure patients by means of solicitors, agents, circulars, displays, or advertisements inserted in commercial periodicals.
- Announcements in medical journals or business cards, not stating fees, are permissible. A statement that the work is medically supervised should appear on the announcement.
- A member may use the term "Physiotherapist" or "Physical Therapist" on an office door.

III. BEHAVIOR

- Members shall not indulge, before patients, in criticism of doctors, co-workers, or predecessors who have handled the case.
- It is well to bear in mind that our reputation as individuals and a group depends upon professional accomplishments and upon adherence to the standards of our organization.

IV. DISCIPLINE

Charges and evidence against offenders will be weighed and acted upon by the Executive Committee.

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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66:1-11, July 1943.

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NUMBER

THE HYPERVENTILATION SYNDROME

JAMES I. SHORT, COMMANDER MC, USNR

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ERYTHROBLASTOSIS IN A CHINESE INFANT

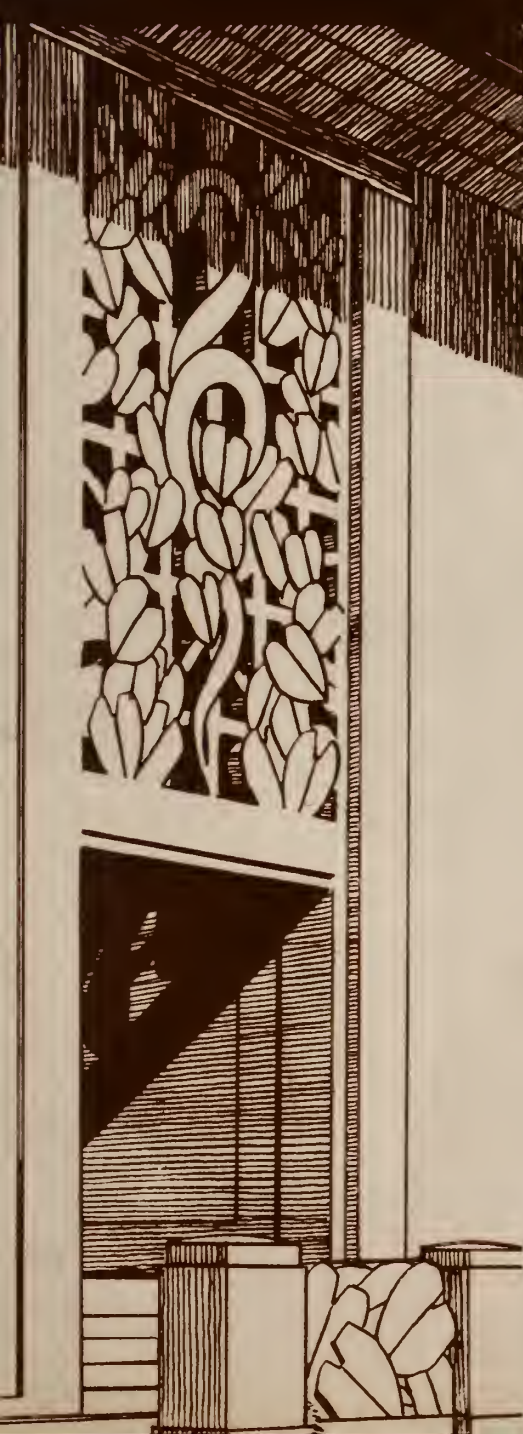
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1. Tracy Putnam: Convulsive Seizures, p. 4, J.B. Lippincott Co., 1943.

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1. Am. J. Dis. Child. 66:1 (July) 1943.



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The Hyperventilation Syndrome

COMMANDER JAMES J. SHORT, M.C., U.S.N.R.

If experience in the present war has taught us anything it has served to underscore the great importance of psychogenic factors in the etiology of disease. Psychosomatic medicine is becoming an important field of research. We have come to realize that organic diseases have many of their roots in anxieties, complexes, psychoneuroses and all the mental and emotional states that flesh is heir to. Today we no longer give too much thought to a peptic ulcer—we treat the patient; in like manner we handle the hypertensives, for despite the promising work of Goldblatt on renal ischemia, the treatment of the psycho-neurogenic factors in most cases offers the best means of alleviating the arterial tension. One could argue with considerable plausibility that obesity, and possibly its offspring diabetes, have part of their origin in an underlying psychoneurosis, and it wouldn't be difficult to convince the most skeptical that even the venereal diseases occasionally stem from an emotional imbalance.

The human organism can no longer be departmentalized and its emotional experiences shrugged off as irrelevant. We must consider it and treat it as a whole. At present we are groping blindly but hopefully toward a better understanding of the underlying mechanisms by which fear, rage, pain and less acutely—but none the less certainly—the anxieties produce not only disorders of function but also even histological change as well.

Biochemistry, endocrinology, psychiatry and general physiology are all involved. The specialists in all fields must become interested in these subjects if rapid strides are to be made.

Much credit is due Cannon, Dale, Crile, Draper, Van Slyke, Alvarez, Kerr, Henderson, Haldane, and many others who have pioneered in various fields and have pointed the way.

As a result of the emotional stresses associated with war we have a vast reservoir of material for the study of psychosomatic disorders. For unknown reasons not all persons react in the same manner to identical conditions. For example, one may develop a peptic ulcer; another, a cardiac neurosis; and another, intractable vomiting. Conditioned reflexes play a part in some, probably the result of early experiences when behavioristic patterns are being laid down. In others, the inhibitory and controlling influences of the higher cerebral centers lose their grip and the explosive centers of the hypothalamic and other subcortical

areas have sway. The *metabolic* manifestations that can be produced by disturbance of the subcortical areas were studied long ago by Claude Bernard. A review of his classic studies is still a profitable and entertaining pastime.

But although it might be of interest to make a general survey of the subject of psychosomatic medicine, I have been asked to discuss one definite subject which falls within this category. This has come to be known as the "hyperventilation syndrome," for the recognition of which I believe Kerr is more or less responsible.

SYMPTOMS

This condition was fairly common in our experience with troops both on the mainland and at a base hospital in the South Pacific Area. It occurred not only following combat experience but also among those who had never been engaged. The symptoms followed a rather consistent pattern: undue fatigue, weakness, dizziness, palpitation, insomnia, paresthesias of hands, face and feet; pain around the heart sometimes radiating to the shoulders and arms; other vague pains in the skeletal muscles; tremors; not infrequently muscle cramps or localized spasms; and last, but of special significance, shortness of breath. We saw no convulsive seizures attributable to hyperventilation, though these are known to occur. All or only part of these symptoms may be present in any individual. Most common are the weakness, dizziness, fatigue and palpitation.

PHYSICAL AND NEURO-PSYCHIATRIC FINDINGS

These patients appeared to be genuinely distressed in mind and body. Their immediate and obvious anxiety usually concerned their physical symptoms. Physical examination usually revealed tachycardia with regular rhythm, an overacting heart suggestive of hyperthyroidism, tremors of hands, thready pulse, undue sweating with cold, clammy extremities, hyperreflexia with evidence of general tenseness, normal blood pressure and negative eye signs. Malnutrition was fairly common, and one gained the impression of general physical inadequacy. Cases secretly observed were frequently seen to be continuously overbreathing either by increased rate or depth of respiration or both. A further slight voluntary increase of respiration was often sufficient to evoke severe symptoms.

Neuro-psychiatric findings were variable. There was often frank evidence of anxiety and patients were frequently labeled emotionally unstable. How-

Read before the Post Graduate Session of the Honolulu County Medical Society, January 8, 1945. Approved for publication. The opinions and views set forth in this article are those of the writer and are not to be considered as reflecting the policies of the Navy Department.

ever, attempts to obtain a history of lifelong emotional instability were often unavailing since the observed episodes were the first experienced. Although attempts to get at the underlying psychic and emotional factors in a given case were not always successful, there was plenty of evidence of tenseness, anxiety and general apprehensiveness. Perhaps narco-analysis, now so widely employed, would have proved more successful in certain cases where the primary cause was buried deep in the sub-conscious; this procedure was not used in these cases as time for a complete neuropsychiatric study was often insufficient. In certain other cases the underlying anxiety was fairly obvious and easily recognized by the patient. Domestic worries appeared to be a fairly frequent feature. Combat experience, although often reported as a cause of general nervous disintegration, was not a feature of our cases of hyperventilation, nor do I recall having seen it mentioned in connection with this syndrome.

LABORATORY FINDINGS

Routine laboratory tests were generally negative. The basal metabolic rate was normal.

GENERAL DISCUSSION

That hyperventilation alone can cause many of the foregoing symptoms will be obvious to anyone who has sufficient curiosity to act as a guinea pig. Several of us who did so testified to the great discomfort experienced. Great determination is necessary to maintain deep breathing at a rate of 20 respirations per minute for fifteen minutes. At the end of ten minutes or earlier, the hands begin to tingle and the facial muscles become numb and cramped. Later, carpo-pedal spasm ensues. The pulse rate increases, and pains in the cardiac area may or may not be experienced. Cramps in the leg muscles are not uncommon; and a most unpleasant aftermath, personally experienced, is renal colic. A diuresis, with an alkaline tide and phosphaturia, occurs rather promptly after the experience, and the renal colic may persist over several hours with pain in the back and bladder. In our observations on normal cases the blood pressure changes did not follow any particular pattern.

What is the mechanism by which hyperpnea is maintained in these cases of chronic spontaneous hyperventilation? Why does apnea not result as it does after voluntary forced breathing? What derangements ensue? How shall we treat the condition? What is the prognosis?

I have tried to put together the jig-saw puzzle, but I must admit that many questions are still obscure in my own mind and I believe that more investigation is called for.

In the first place it is fairly well established that in these cases we have first an underlying anxiety or similar emotional state. This excited condition produces a persistent hyperventilation with resultant unpleasant symptoms. In strongly emotional states—fear and rage, for example—adrenalin is liberated into the blood stream as a result of, and as a support to, sympathetic nervous system stimulation. An adrenalin-like substance, sympathin, is also produced at the neuro-muscular junctions. This excitation of the sympathetico-adrenal system is to enable the organism to take appropriate action in emergencies and to produce increased muscular power and energy for such purpose. Just how many of the symptoms of the syndrome under consideration are directly due to sympathetico-adrenal stimulation, I do not know, but am inclined for the present to believe, that in the more sustained emotional state associated with hyperventilation, the symptoms are chiefly attributable to the hyperventilation *per se*.

How is hyperventilation brought about and maintained over long periods? The mechanism of respiratory control is rather complex. Increase in arterial concentration of carbon dioxide is a powerful stimulus to the respiratory center; anoxemia, even without increase of carbon dioxide, may produce a reflex stimulation of this center through the carotid bodies; and powerful stimulation of it is obtained from the muscles during muscular activity, either reflexly or, as Henderson believes, from the production of a substance which he calls hyperpnein. Certainly the conditions of anoxia or muscular activity are not present in the hyperventilation syndrome. In this condition undue ventilation reduces the normal carbon dioxide concentration, but apnea fails to occur. These patients hyperventilate even when lying quietly in bed. One naturally thinks of an alteration in the respiratory center which renders it more sensitive to low tensions of carbon dioxide. Physiologists tell us that stimulation of the center may result from cerebral impulses directly or through the hypothalamus; Henderson states that emotion may render the respiratory center more sensitive to carbon dioxide. So we have a simple explanation for hyperventilation over long periods despite profound alterations in body chemistry and function, and the production of profound and distressing symptoms.

Hyperventilation may reduce the alveolar carbon dioxide to as little as 50 per cent of the normal concentration. This results in a systematic alkalosis, not from an absolute excess of alkali, but from a disturbance of the normal carbonic-acid-bicarbonate ratio.

CHART 1. *Modification of Van Slyke's original chart to show the possible relationships between pH and alkali reserve (the latter expressed as the CO₂ combining power of the plasma).*

		MAXIMUM TOLFRATED pH RANGE									
		7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.0	
ALKALI RESERVE EXPRESSED AS CO ₂ COMBINING POWER OF PLASMA	100	1. UNCOMPEN- SATED ALKALI EXCESS (EXCESSIVE ALKALI INTAKE)			4. COMPENSATED ALKALI OR CO ₂ EXCESS			7. UNCOMPEN- SATED CO ₂ EXCESS (EMPHYSEMA, MORPHINE POI- SONING, ASTHMA ETC.)			
	90										
	80	2.			5.			8.			
	70				NORMAL						
	60				ACID-BASE						
	50				BALANCE						
	40	3. UNCOMPEN- SATED CO ₂ DEFICIT (HYPERVEN- TILATION)			6. COMPENSATED ALKALI OR CO ₂ DEFICIT			9. UNCOMPEN- SATED ALKALI DEFICIT (DIABETIC OR NEPHRITIC ACIDOSIS			
	30										
	20										

This ratio, which normally is 1 to 20, is very carefully maintained. To maintain this relationship in the presence of a deficit of carbon dioxide the body attempts to withdraw bicarbonate from the blood. If the bicarbonate is withdrawn with sufficient rapidity the normal ratio is maintained and a *compensated* carbon dioxide deficit results, with normal pH but diminished plasma bicarbonate ("aearbia"). If bicarbonate is *not* withdrawn with sufficient speed its preponderance produces an increased PH. Alkaline phosphates are eliminated in the urine, and account for the alkaline tide following deep breathing. Bicarbonate is withdrawn to the tissues, though the major portion of it combines with hemoglobin. A markedly increased pH, even to a value of 7.9, has been reported as the immediate result of strenuous experimental overventilation. Presumably lesser degrees obtain in the syndrome under discussion. Incidentally, the increased alkalinity of the hemoglobin inhibits its oxygen carrying capacity, so that, paradoxically, one may encounter cyanosis from reduced hemoglobin even in the presence of excessive oxygen to the lungs. Such a cyanosis will be described later.

Increased pH (alkalosis) produces tetany, which is merely a term for increased neuro-muscular irritability.

How does tetany from alkalosis differ from that due to calcium deficiency? Is there any relation between the two?

Symptomatically they are identical. If we attempt

to explain the tetany of alkalosis on the basis of a disturbance in the calcium ion we get off a bit into the realm of speculation, but this much is known: There is in hyperventilation alkalosis no reduction in the normal value of 9–11 mg. per cent of serum calcium; normally 50 per cent of this value is diffusible and in the ionized form. It is this diffusible, ionizable fraction that is thought to be physiologically active and effective in maintaining normal neuro-muscular excitability. Although the evidence is not complete, there is reason to believe that *ionized* calcium is reduced in alkalosis, and that tetany is thus produced.

If this explanation is correct, can the cardiac symptoms of hyperventilation and possibly also of "neuro-circulatory asthenia" be explained on this basis?

Experimentally, in the presence of sodium, a proper balance between calcium and potassium ions is necessary to maintain normal tone and function of cardiac muscle. A relative increase in the calcium ion causes cardiac arrest in systole ("calcium rigor"). A relative increase in the potassium ion causes the opposite effect, *i.e.*, cardiac arrest in diastole ("potassium inhibition"). Thus a diminution in the calcium ion, producing a relative excess of potassium, may be a factor in this condition. We should remember however that the clinical manifestations of so-called neuro-circulatory asthenia ("effort syndrome," "irritable heart," "disordered action of the heart" ["DAH" of Sir Thomas Lewis], "soldier's heart," "cardiac neurosis") are not confined to the heart, but are so similar to those of hyperventilation as to lead many to believe that they are part and parcel of the same clinical picture. The main question, it seems to me, is how much of a role, if any, is played by overbreathing in the production of so-called neuro-circulatory asthenia. It is my personal opinion that the two conditions are essentially identical. A reliable test for hyperventilation is needed.

ATTEMPT TO DEVISE TEST FOR HYPERVENTILATION

By means of a gas flow meter and a gas mask an attempt has been made to determine normal standards for volume of breathing. If comparisons between individuals are to be made it is obvious that volume per minute must be related to some comparable unit, such as the surface area, as is done in the test for basal metabolic rate. Basal conditions should obtain and perhaps the BMR itself should be taken into consideration. However it is probable that for practical purposes a normal BMR could be assumed, for within the usual limits of normal variation it is doubtful if a significant factor would be introduced.

A few preliminary studies were made on two normal subjects. The tests were terminated because of unsuitable apparatus. Neither subject was under basal conditions, as each had had breakfast about two hours previously. After a rest period of about fifteen minutes one subject was found to ventilate at rest at

the rate of 4.4 liters per sq. meter per minute, the other at 3.26 liters. Hyperventilation to three times this volume for five minutes produced a sensation of giddiness in one subject; but at this point the experiment was terminated because the apparatus offered too great resistance to forced breathing, which condition would increase carbon dioxide production and thus vitiate the result.

These observations, though of no great value in themselves, are offered to indicate the type of test which in my opinion should be devised to aid in the study of hyperventilation patients. Uncontrolled breathing to test the reaction of such cases, as has been described in the literature, is of little value without normal standards for comparison, since everyone will show distressing symptoms if he overventilates long enough. The differentiation of a normal person from a chronic overbreather is merely a matter of the degree of increased breathing necessary to produce acute symptoms. An example of the symptoms produced by forced breathing is as follows:

SIGNS AND SYMPTOMS FROM VOLUNTARY HYPERPNEA

A normal hospital corpsman, aged 20, volunteered to act as subject. He was given a short period of rest in recumbency before the test. Preliminary examination showed his height to be 73 inches, his weight 168 lbs. His personality was calm and apparently phlegmatic. Pulse rate at rest was 52, regular; blood pressure 120/68; knee jerks equal but diminished; general physique was of the athletic type.

TABLE 1. *Observations during voluntary hyperventilation.*

TIME (min. after HV.)	P.	BP.	REMARKS
	52	120/68	HV. begun.
2	72	126/66	Face flushed. No symptoms.
4	72	124/66	
7			Slight tingling of fingers.
8	68	124/74	Lightheadedness.
11	68	120/68	Small pulse volume.
12			Numbness around mouth. Hands numb and tingling. Arms weak.
13	72	122/68	Severe numbness of face. Slight cramping of hands. Tight sensation back of ears. Face extremely flushed.
18	76	128/66	Hands cold. Palms clammy. Pain over precordium.
20			Tightness in upper abdomen and lower chest, spasms of hands.
22	80	120/62	Severe constriction in chest. Pulse weak, thready. Pain down right arm.
24			HV. stopped because of severe symptoms. Very weak and prostrated.
27			Trousseau's sign positive. Hands and legs cramping. Vision blurred. Marked tremors of hands. Appears very distressed.
28			Face and hands very cyanotic. Long periods of apnea. Too weak to stand.
30			Symptoms diminishing. Cramps persist in upper extremities.
33			Still very weak.
35			Able to arise. Very tremulous.

Rate of respiration varied from 16 to 20 except for the last few minutes when it rose to about 30. It

is estimated that about three to six times the normal volume of air passed through the lungs.

INTERPRETATION

Yandell Henderson by direct manometric measurements has shown that tonus of skeletal muscles falls markedly during acapnia (carbon dioxide deficit). He emphasizes that the importance of this factor has not been sufficiently recognized in clinical medicine. Return of blood to the right heart depends upon general muscle tonus more than on any other one factor. Any influence which lowers this tonus interferes with venous return and lowers cardiac output. Blood pressure may fall in extreme instances, but vasoconstriction tends to offset this tendency. Coldness of the extremities and a small thready pulse, as seen in the described subject, is evidence of such compensation.

The assumption of collapse of the vaso-motor system in so-called shock is probably fallacious. Failure of general muscle tonus with consequent lowering of intra-tissue pressure and blood stagnation is an explanation which probably fits the observed conditions much more satisfactorily. In addition to acapnia (carbon dioxide deficit), emotional reactions, concussions, surgical procedures, anesthesia, etc., may also be factors in producing atonia. According to Henderson the occasional shock-like state seen as a result of spinal anesthesia is due to the anesthetic's having penetrated to the motor centers. Paralysis with loss of tonus of certain areas is the result.

The vasomotor nervous system exerts a strong direct influence on arterial pressure but relatively little on venous return. Carbon dioxide, on the contrary, exerts relatively little direct influence on arterial pressure, but a powerful influence on venous return. If hypotonic failure of the circulation ("shock") is due to failure of venous return, the failure is not in the vasomotor nervous system. Henderson suggests that a better term for traumatic and surgical shock would be hypotonia.

Thus, the respiratory center exerts an indirect but powerful control over the venopressor mechanism. Every muscle in the body is influenced by its degree of excitability.

The literature from time to time has contained warnings against the common practice of treating shock with external heat. Such a procedure is thought to defeat nature's attempt by vasoconstriction to compensate for a condition of diminished cardiac output and lowered circulating blood volume. It is also thought to aggravate an already existing tissue anoxia by elevating the metabolism and thereby increasing the demand for oxygen.

The lowered muscle tonus which accompanies a carbon dioxide deficit produces a vicious circle. Acapnia may be enhanced by lowered muscle tonus since diminished oxidation necessarily results in impaired

carbon dioxide production. Carbon dioxide is urgently needed to break the cycle.

TREATMENT

How shall we treat these patients? The answer is simple, the accomplishment difficult and often disappointing. If, as proposed by Kerr and generally recognized, an anxiety or other emotional state underlies these physical manifestations, the obvious thing is to remove the anxiety. The psycho-therapeutic approach is indicated; but to date psychotherapy has not, in my experience, produced the results hoped for. This however does not invalidate psychotherapy, which is the rational procedure. Our failure was probably due to insufficient time and effort to effect neuro-psychiatric rehabilitation.

The intravenous injection of calcium is attended with dramatic relief, though not with permanent success. This is attributed to the presence of an increase in the calcium *ion*, not to an increase of *total* calcium. The effect however is transitory. Ammonium chloride is highly recommended by Kerr, in a dosage of 1 gram 3 to 6 times a day. Although this is designed, and might be expected, to restore the plasma pH to normal and thus increase calcium ionization, clinical results in our hands were not remarkable. Inhalation of an oxygen-carbon dioxide mixture, 70 parts to 30, afforded prompt relief in Kerr's cases; and rebreathing of expired air accomplishes the same purpose. These three procedures are largely palliative. They do, however, have the advantage of demonstrating to the patient the immediate cause of his unpleasant symptoms, and thus enlisting his cooperation in the attempt to break the cycle. But chief reliance must be placed on the attempt to understand and eliminate the emotional state.

Drugs, however, may come to play a major part in rehabilitation. Heath and Powdermaker recently reported that ergotamine tartrate parenterally restored normal physiologic function to patients long suffering from so-called "battle reaction" ("shell shock" of World War I). Ergotamine is a sympatholytic drug and can successfully neutralize the effect of adrenalin. After months of incapacitation their reported cases were successfully returned to combat duty once the autonomic nervous system was controlled. These authors make a distinction between "battle reaction" and psychoneurosis. They regard the former merely as an exaggeration of the normal reaction of the sympathetic system to fear, and find no evidence of psychoneurosis in many cases. Relief of the sympathetic drive quickly restores the patient in their experience.

This recalls some personal experiments with adrenalin. A few minutes after its administration to an intelligent but non-medical normal subject, I asked him how he felt. His reply was that he felt as if he had been scared to death.

I have not tried ergotamine in the treatment of hyperventilation but I believe it worth a thorough trial

in the light of the experience of Heath and Powdermaker.

CONCLUSIONS

The clinical condition which has been labeled "hyperventilation syndrome" demands more study. Some painstaking laboratory work is first in order. Many of our conclusions are based on experiments with normal subjects. Are the alveolar carbon dioxide and plasma bicarbonate really reduced in these patients? Is the plasma pH increased, or so near the borderline that it can be increased with little effort? Is the ionized calcium really diminished? Can we devise a good clinical breathing test with normal standards—a breathing tolerance test? The present tests are crude and not sufficiently standardized. Other questions suggest themselves.

Thus it is that every advanced step raises new horizons; but that is what makes medicine so fascinating.

DISCUSSION

COMDR. FERDINAND FETTER, M.C., U.S.N.R.: First, I want to congratulate Dr. Short on an excellent paper on a subject that is little discussed and not well understood. This paper goes a long way toward clarifying the subject, which is extremely important in military medicine, as Dr. Short pointed out. Illustrating this further, Carryer¹ of the Mayo Clinic has said in a recent paper that medical officers with whom he talked considered that the hyperventilation syndrome was one of the most commonly missed medical diagnoses in the armed forces, and I know the diagnosis is often missed in civilian practice, too.

In the past, this condition has interested the experimental physiologist rather than the clinician. Knowledge of and interest in this symptom complex as a clinical entity is, I believe, of fairly recent origin. As Dr. Short has indicated, it is a psychosomatic disease, with symptoms referable to the respiratory system, and comparable therefore to nervous indigestion and spastic colon, say, in the gastrointestinal tract, and functional heart disease. Considering the general lay knowledge of the relation and the effect of the emotions on respiration, it is surprising that more attention has not been paid to functional respiratory disease. With the increase in psychosomatic disease in the services, more and more cases of this syndrome will be seen if they are looked for. As Dr. Short has pointed out, combat duty is not necessary for its development. I have seen a fair number of cases among Marine recruits at boot camp.

Stead and Warren² of Emory University in Atlanta have advised doctors to observe the effects of voluntary hyperventilation in all patients complaining of faintness, giddiness, light-headedness, and "black-outs." In a large number of such cases, the patient's symptoms will be reproduced by one to two minutes of voluntary hyperventilation. As treatment, at least in milder cases, these authors believe that demonstration of the cause of the symptoms is often sufficient. Other treatments for an attack include advising the patient to hold his breath, or to rebreathe into a paper bag. Of course, as Dr. Short has said, more intensive psychotherapy is needed in many cases.

This syndrome is also important in aviation medicine. Hinshaw and Boothby³ of the Mayo Clinic have discussed this aspect of the disease. In general, they believe that many accidents due to so-called pilot error are the result of this syndrome, which develops under conditions of stress, such as bad flying weather, in ordinarily stable pilots. Hinshaw has given an interesting account of his own experiences

with it in one of his earliest solo flights as a student pilot. When attempting to calculate the landing maneuver in turbulent air, he began to feel faint, weak, dizzy and anxious. He said he was obviously frightened, but when a sense of tingling and numbness of his fingers appeared, he realized he was hyperventilating. Although familiar with the clinical syndrome, he had never experienced it previously while flying. A few minutes of controlled respiration gave complete relief, and he made a satisfactory landing.

The relation of the hyperventilation syndrome to neurocirculatory asthenia is an interesting question. Dr. Short believes the conditions are essentially identical. He may well be right, but I think, and I am sure he will agree, that more study and observation of these patients is necessary before a final answer can be given. I think there is no doubt that in many cases, neurocirculatory asthenia is due to hyperventilation. Carryer¹, who agrees with Dr. Short, reported that hyperventilation was present in 80 per cent of a large series of cases of neurocirculatory asthenia. For practical purposes, especially as far as the treatment of neurocirculatory asthenia goes, we should all remember that involuntary hyperventilation is often responsible for its symptoms.

I was very much interested in Dr. Short's account of the symptoms produced by twenty-four minutes of voluntary hyperventilation. I think he did well to find such a cooperative hospital corpsman, but I still wonder how he got him to continue hyperventilating so long. Dr. Short told me that he himself had hyperventilated for a few minutes to find out what it was all about, but I notice that he stopped after a few minutes, not twenty-four. But I am sure that I would have, too.

Again, I want to say that I think this has been a very illuminating paper on a little discussed but extremely important subject.

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Acute Yellow Atrophy Caused by Sulfathiazole

REPORT OF CASE

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The fact that the sulfonamide drugs can cause liver damage has long been known. Long and Bliss¹ and Hageman and Blake² in 1937 showed that acute toxic hepatitis with decrease in liver function was one of the toxic manifestations of these drugs. In 1938 Cline³ reported a case of acute yellow atrophy of the liver following use of sulfanilamide. Since that time R. Ottenberg⁴ and Berger and Applebaum⁵ have reported similar cases.

In this case the patient continued to take sulfathiazole of her own volition after toxic hepatitis developed, which explains the severe liver damage.

CASE REPORT

A Caucasian woman, age 45, was admitted to The Queen's Hospital City and County Medical Service in a comatose condition on December 14, 1942. Her history, which we obtained at a later date, was as follows: The patient had consulted her private physician on September 12, 1942 for treatment of a vaginal discharge. This discharge proved to be due to a Neisserian infection. She was treated with sulfathiazole for two weeks with excellent improvement. However, two weeks later her smears were again positive and she was admitted to a Honolulu hospital for further treatment. While there she received another course of sulfathiazole with good results. The patient was discharged from this hospital the latter part of October 1942. Of her own volition, she continued to take six 7.7 grain (0.5 gram) sulfathiazole tablets daily, as a precaution against a relapse. Sometime in mid-November 1942 she noticed that her skin was definitely yellow. In spite of this she continued taking sulfathiazole until two days before her admission to The Queen's Hospital. From the time she was discharged from the other Honolulu hospital until her admission to The Queen's Hospital she had taken one hundred fifty 7.7 grain tablets of sulfathiazole (six daily). During this period she had had no medical supervision.

Physical examination on admission showed a well nourished, middle aged woman, deeply jaundiced and semi-comatose. The pupils reacted poorly to light. The sclerae were intensely icteric. The teeth showed moderate alveolar pyorrhea. The gums were swollen and spongy and exuded blood. Chest was normal except for a few rales at the right base. The heart was rapid but regular and the blood pressure was 130/80. Abdomen was normal, except for absence of any liver dullness. Extremities, and a cursory neurological examination, were normal. Patient was incontinent of urine and feces, both containing gross evidence of bile. A tentative diagnosis of acute yellow atrophy of the liver was made.

On December 14, 1942, patient was given 1000 cc. of 10 per cent glucose intravenously. A few hours following this she became rational. She remained in fairly good condition for two days, when she again became comatose. From this point on, her condition gradually worsened. Her abdomen became distended, a moderate ascites developed and she became wildly delirious. She died on December 22, 1942.

Treatment consisted of 1000 cc. 10 per cent glucose in normal saline twice daily, dependent on the amount of nourishment taken by mouth. Vitamin K was given hypodermically, 3 mg. twice daily, with a high casein protein diet and Decholin grains 3¾ three times a day after meals. Pantopon grain 1/3 was used as a sedative.

Both cervical and urethral smears were negative for gonococci. The Wassermann and Kahn tests were both negative. The blood chemistry showed an N.P.N. of 27, creatinine 1.3 mg. per cent and a blood sugar of 85 mg. per cent. Icterus index was 150. The Van den Bergh showed an immediate direct reaction. Indirect reaction was 15 mg. per cent. The hemoglobin was 97.8 per cent, and the red blood count was 4,360,000. The white blood count was 10,650, with a differential of 83 per cent polys, 15 per cent lymphocytes, 1 per cent eosinophiles and 1 per cent basophiles. The prothrombin level was 30 per cent of normal. A bromsulfalein test showed 80 per cent dye retained at five minutes and 80 per cent of the dye retained at thirty minutes. The urine analysis showed specific gravity 1.020, albumin one plus, bile positive, and sulfathiazole crystals present.

AUTOPSY FINDINGS

The body was that of a well developed and well nourished, deeply jaundiced, middle aged white woman.

Thoracic viscera were of normal size, shape and position.

The heart was flabby in consistency, but otherwise normal.

The abdominal cavity contained approximately 3000 cc. of clear yellow fluid. The mesentery and peritoneum were moderately edematous. The abdominal viscera grossly appeared to be of normal size, shape and position except that the liver was markedly reduced in size.

The liver weighed but 620 grams. The surface was somewhat wrinkled over the left half. The right half of the liver was smooth. The edge was somewhat rounded. It was pale, yellowish brown in color and cut with increased resistance. There were many areas of yellow atrophy and the entire parenchyma was marked by the presence of multiple petechial hemorrhages. The entire organ was bile stained.

The gall bladder was small and collapsed, and contained only a small amount of viscid yellow liquid.

The spleen weighed 130 grams. The surface was colored slate gray and was mottled by small areas of pale reddish gray.

There was no enlargement of any of the readily accessible lymph nodes.

The right and left kidneys weighed 140 and 150 grams respectively. They were imbedded in a moderate amount of perirenal adipose tissue. The capsules stripped readily and revealed a uniformly smooth bile-stained parenchyma. They were firm in consistency and on section showed a bile-stained stroma which revealed multiple petechial hemorrhages. There was no narrowing of the cortex and there was a normal relationship between cortex and medulla.

The pelvis and ureters were normal.

The bladder wall was of average thickness and was lined by a pink mucosa which showed evidence of early trabeculation.

Both ovaries were enmeshed within fibrous adhesive bands which sealed the abdominal ostia of the fallopian tubes. The peritoneum covering the ovaries was moderately thickened.

There were multiple violin-string adhesions involving both fallopian tubes. Both abdominal ostia were sealed by dense fibrous adhesions and fimbriae were not evident. The tubes were markedly distended by the presence of thick chocolate-colored liquid. Their appearance was not incompatible with an endometriosis of the fallopian tubes.

The uterus was symmetrical and showed no appreciable abnormalities except for some small cysts in the cervix.

The gastro-intestinal tract was grossly normal.

The brain weighed 1310 grams. There were no gross abnormalities evident.

Microscopic Findings

The essential positive findings were as follows: The fallopian tubes were dilated and filled with necrotic exudate. The walls showed a definite well marked chronic inflammatory reaction.

Both kidneys showed almost complete necrosis of the tubular epithelium and slight edema of the glomeruli, but no evidence of any cellular infiltration and no proliferative lesions.

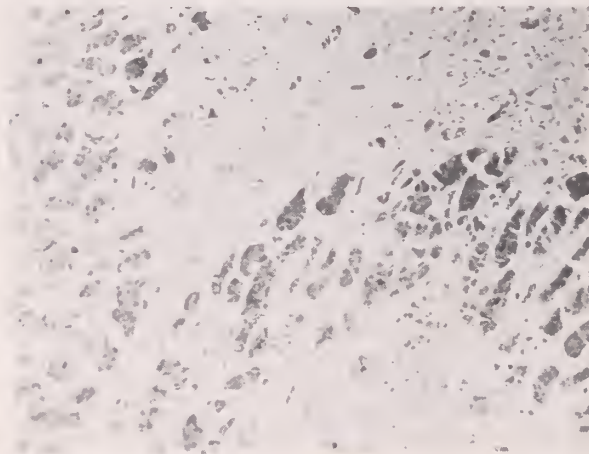


Fig. 1. Section showing distortion of liver lobules with areas of necrosis.

The liver showed an acute toxic necrosis, with complete distortion of the architecture and a breaking up of the liver lobules and cord. There was a slight degree of monocytic infiltration present (fig. 1).

DISCUSSION

Most clinicians who have used the soluble sulfonamides for emergency intravenous use have occasionally had the experience of seeing a transient icterus develop. This condition usually clears in four or five days following cessation of use of the drug. It is interesting to note in a recent article by Murphy, Kuzma, Polley and Grill⁶, in which clinico-pathologic studies were made of renal changes caused by sulfonamide compounds, that toxic liver damage was also a prominent feature. In this case the liver damage was outstanding but the renal tubular damage was quite significant. This change was similar to one phase of renal damage described by these authors.

CONCLUSIONS

A case of acute yellow atrophy of the liver due to prolonged use of sulfathiazole is reported.

The author is indebted to Dr. A. Sumner Price for assistance in preparation of pathologic material. Dr. I. L. Tilden made the photomicrograph.

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Influenzal Meningitis

CASE REPORT

MAJOR JOSEPH G. CUTLER, M.C., A.U.S.

AND

CAPTAIN JACK M. PARTAIN, M.C., A.U.S.

Aleman¹, in 1940, after a review of 478 cases of influenzal meningitis in patients under the age of two, compiled statistics showing a mortality rate of 97 per cent. Fothergill² in 1937 reported a mortality rate of 84.6 per cent in which influenza antitoxin in horse serum was used in approximately 200 patients. Results in the hands of other workers using the same scheme of therapy, however, have been extremely variable, with percentages ranging from 50 to 100 per cent.

Experience has shown that the type B influenza strain is concerned in virtually all serious influenza infections in childhood. Cognizant of this and the similar biological characteristics that exist between the pneumococcus and hemophilus influenzae organisms, Alexander³ developed a type-specific rabbit serum, the protective element of which was the anti-carbohydrate antibody. Furthermore, the antibody could be quantitated in terms of milligrams of immune nitrogen per cubic centimeter. She advocated its use early in the disease, either intravenously alone or intravenously and intrathecally. The combined use of sulfonamides, preferably sulfadiazine, and type-specific influenzal rabbit serum has made possible a much more optimistic outcome in the treatment of this disease. A report such as that of Boisvert, Fousek and Grossman⁴, with a mortality rate of 15 per cent in 26 cases employing present therapeutic advances, is not uncommon. It is of interest too that these same workers employed intramuscular administration of the serum with results as efficacious as with the intravenous route.

The following is the report of a case of influenzal meningitis in a 12-month-old infant with recovery.

REPORT OF CASE

D. A. K., a one-year-old boy, was well until the day before admission, when, after four hours' exposure to the hot sun, he became irritable and feverish. He vomited repeatedly soon thereafter. Because of drowsiness and generalized convulsions which occurred several hours later, he was admitted to the contagious section of the Tripler General Hospital.

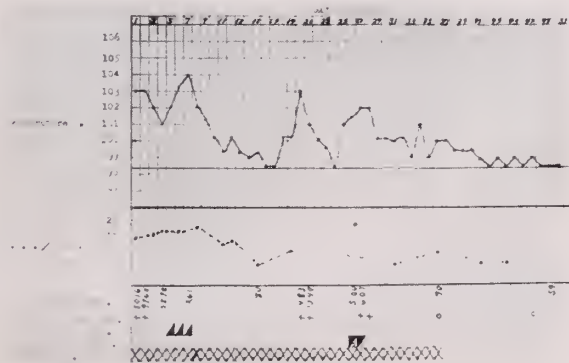
Examination on admission revealed a critically ill infant with a rectal temperature of 103 F. The anterior fontanel was bulging and there was slight nuchal rigidity. There was no evidence of a respiratory tract infection. The initial spinal tap revealed a cell count of 5106 per cubic millimeter

of which 92 per cent were polymorphonuclears; the sugar was qualitatively absent and the protein was estimated at 135 mg. per hundred cc. Pleomorphic gram negative organisms were present on smear; their exact identity could not be determined without culture, but after forty-eight hours they were identified as *Hemophilus influenzae*.

Sulfadiazine, one and one-half grains per pound body weight per day, was instituted on the first day of hospitalization. The drug was well retained by mouth. An attempt was made to obtain the Alexander type of serum in this area. Failing this, Fothergill's serum (60 cc.) was administered intravenously on the fifth, sixth and seventh days. The patient's condition improved considerably, and by the fifteenth day he seemed cheerful, was taking his feedings well and showed only a mild pleocytosis of the spinal fluid (80 cells per cubic millimeter). However, on the twentieth and twenty-first days there was a relapse manifested by an abrupt rise in temperature, mild stupor and increasing tension of the anterior fontanel. Cultures of the spinal fluid were still positive for the organism and spinal fluid counts were 483 and 1340 on these two successive days.

A mainland requisition was filed at this time. Five days later, within a period of thirty-six hours the contents of three vials of anti-*Hemophilus influenzae* type B rabbit serum totaling 75 milligrams of antibody nitrogen were injected intramuscularly after negative ophthalmic and cutaneous tests for sensitivity. An unsuccessful attempt was made to demonstrate free antibody by capsular swelling of the organism against the patient's blood serum after the serum administration, as suggested by Alexander.

The clinical course thereafter was most satisfactory. In view of the marked general improvement, even though a spinal culture had been positive one day following the serum administration, a spinal tap was not repeated until the thirty-sixth day. This fluid contained 90 cells and was bacteriologically sterile. Sulfadiazine was discontinued at this time. The temperature subsided by lysis to within normal limits by the thirty-eighth day. Repeated spinal fluids thereafter were free of organisms, though the spinal fluid



Temperature, leucocyte count in blood and spinal fluid, and spinal fluid culture, in relation to treatment.

Approved for publication. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the War Department.

revealed 59 cells per cubic millimeter (70 per cent lymphocytes) two days prior to discharge. Four months have elapsed since this hospitalization of fifty-one days' duration and the patient has remained free of any sequelae.

It might be well to add that penicillin was used intrathecally and intramuscularly, shortly after admission and during the relapse, with equivocal results. In view of the recent literature⁵ it most likely did not influence the course of the disease.

SUMMARY AND CONCLUSIONS

(1) Anti-Hemophilus influenzae type B rabbit serum was used late in the treatment of an infant male suffering from influenzal meningitis with apparent success after sulfadiazine and anti-influenzal horse serum had proven ineffective.

(2) The authors are aware of the importance of the time element and hence advocate the plan of com-

bined therapy employing type-specific rabbit serum and sulfadiazine early in the course of the disease.

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Erythroblastosis Fetalis in a Chinese Infant with an Rh Positive Mother

I. L. TILDEN, M.D., AND WAH KAI CHANG, M.D.

Honolulu

The discovery of the Rh factor by Levine and Stetson¹ and Landsteiner and Wiener² in 1939–1940, and its application to the pathogenesis of erythroblastosis fetalis and hemolytic transfusion reactions, has aroused widespread interest throughout the medical world. The number of papers dealing with this subject listed in the Quarterly Cumulative Index increased from 5 in 1940 to 53 in 1943, and 39 are listed in the first quarter of 1944.

The details of isoimmunization in relation to erythroblastosis fetalis and hemolytic transfusion reactions have previously been presented locally by one of us³ and will not be considered here. Suffice it to say that there is fairly general agreement in the literature that isoimmunization of an Rh negative mother by the Rh agglutinin in fetal red cells accounts for at least 90 per cent of cases of erythroblastosis. The reader is referred to the Roche Review for May, 1944, which contains an excellent discussion of the whole problem.

The red cells of approximately 14 per cent of the random white population of the United States tested with standard anti-Rh serum lack the Rh agglutinin, and these people are accordingly termed "Rh negative." The Honolulu Blood Plasma Bank at the time of this writing has tested some 500 people of Caucasian ancestry in Hawaii with standard Rh serum supplied by the Blood Donor's Service of New York finding 13.62 per cent of them Rh negative, a proportion similar to that existing on the mainland⁴. Only one Rh negative person was discovered, however, in 468 Japanese, and none at all in 118 Chinese. These results are in accord with the experience of Levine and Wong⁵, who tested 150 Chinese living in New York, finding only one Rh negative individual in this group. More recently Waller and Levine⁶ have reported on 150 Japanese residing in New York only two of whom were Rh negative with standard anti-Rh (Rh₀) serum. So far as we have been able to ascertain, these have been the only studies so far carried out on the incidence of the Rh factor in oriental people.

If the vast majority of orientals are Rh positive, as these studies seem to indicate, erythroblastosis fetalis should be an extremely rare disease in these races. Levine and Wong investigated this question in Chinese and were indeed able to find in the literature only one case of erythroblastosis in a Chinese infant;

a search of the files of the Chinese Medical Journal yielded no additional cases. Furthermore, two men with a wide obstetrical experience in China could recall having seen no example of this condition in many thousands of deliveries. Waller and Levine⁶ imply that the incidence of erythroblastosis fetalis and intra-group transfusion reactions is low in the Japanese race also because of "the scarcity of reports of these conditions in the Japanese medical literature."

In view of the foregoing the following case is significant because it occurred in a full-blooded Chinese infant whose parents are both Rh positive.

CASE REPORT

A boy weighing 5 lbs., 11 oz., the third child of a Chinese couple, was born spontaneously at eight and one-half months on Oct. 10, 1944. The two previous pregnancies resulted in living children, both males, born in 1931 and 1938 respectively, and both were—and are—perfectly normal in every respect. Thus a period of seven years elapsed between the first and second, and the second and third, pregnancies; there were none in the intervals, and the mother had never received a blood transfusion.

The third pregnancy was uneventful and labor easy, lasting four hours. The baby appeared "bloated" at birth and the abdomen was distended. An indefinite mass was felt in the right side of the abdomen. The baby took only a few gasps of breath, and treatment with the respirator, oxygen and lobeline was without avail. The heart stopped beating about ten minutes following birth.

AUTOPSY FINDINGS

Gross: There was no remarkable external abnormality except that the baby appeared unusually pale. Both pleural cavities and the abdominal cavity were filled with clear fluid. The partial pericardium was adherent to the sternum by a layer of partially organized blood clot which measured 0.5 cm. in thickness.

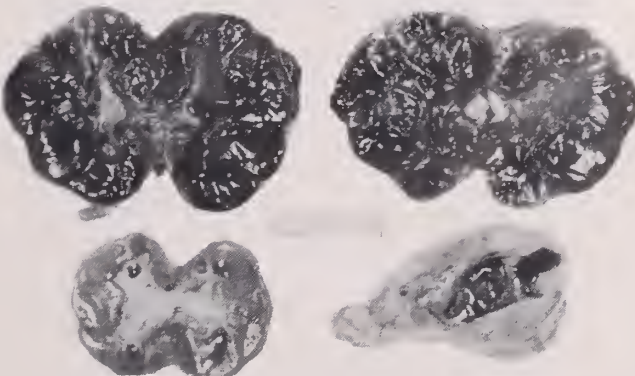


Fig. 1. Photograph of kidneys (above) showing extensive renal hemorrhage. Normal infant kidney (below left) and blood in urinary bladder (below right).

From the Kapiolani Maternity & Gynecological Hospital, Honolulu.

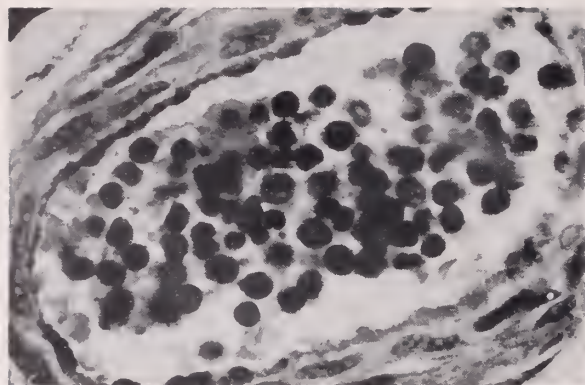


Fig. 2. Small vessel in the heart packed with nucleated blood cells, most of them members of the erythrocytic series. Hematoxylin and eosin. X 600.

The liver was enlarged (116 grams), pale and firm. The spleen weighed 9 grams and was unusually pale and very firm in consistency. Both kidneys were greatly enlarged as a result of extensive medullary hemorrhage, the right weighing 31.5 grams and the left 28 grams (fig. 1). The calyces and pelves of both kidneys and the urinary bladder contained recent blood clot. The urachus was patent to a point just below the umbilicus. Microscopic: The outstanding finding in all the microscopic sections was the extreme engorgement of all vessels by immature blood cells (fig. 2). Many of these were easily recognizable as normoblasts and megaloblasts, while some were larger, with large round or oval pale-staining nuclei. The latter were thought to be blast cells of one sort or another. The sections taken through the myocardium presented an especially striking picture. Every capillary was so packed with nucleated blood cells that the individual muscle fibers were actually pushed apart (fig. 3). The pancreas also presented an

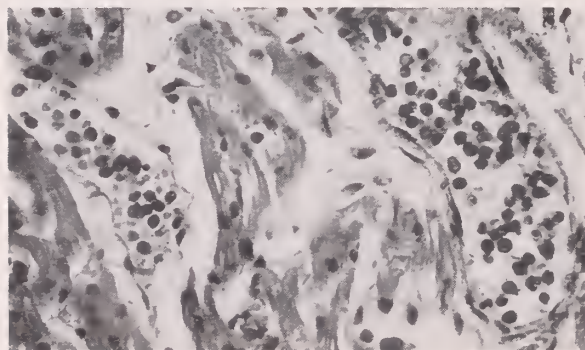


Fig. 3. Heart showing engorgement of capillaries by nucleated red cells. The muscle fibers are pushed apart to some extent. Hematoxylin and eosin. X 250.

amazing appearance because extra-vascular infiltration of the parenchyma by nucleated red cells had taken place. Some of these exhibited large mitotic figures, producing a picture not unlike that of a malignant neoplasm (fig. 4). The liver was one vast island of hematopoiesis with the liver cells obscured and mitotic figures much in evidence (fig. 5).

Hematologic: The blood in the heart was still fluid although the autopsy was not performed until 24 hours following death. A blood count done on the heart blood revealed between 500,000 and 600,000 white cells and 2,100,000 red blood cells per cubic mm. It was determined from smears made of the blood in the white counting pipette and from smears made of the heart blood that the majority of the cells giving the high white count were nucleated mem-

bers of the erythrocytic series. The fetal red cells were Rh positive.

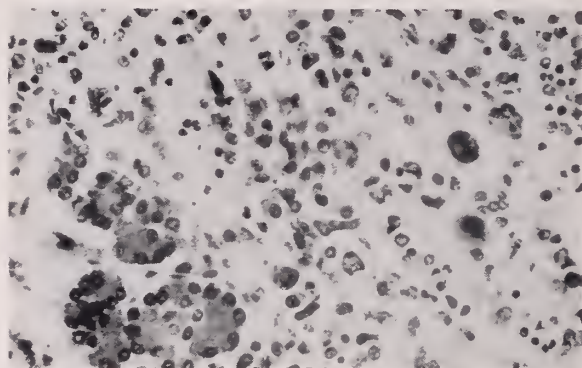


Fig. 4. Infiltration of the pancreas by immature blood cells with encroachment upon the acinar tissue (below, left). Observe the large bizarre mitotic figures. Hematoxylin and eosin. X 250.

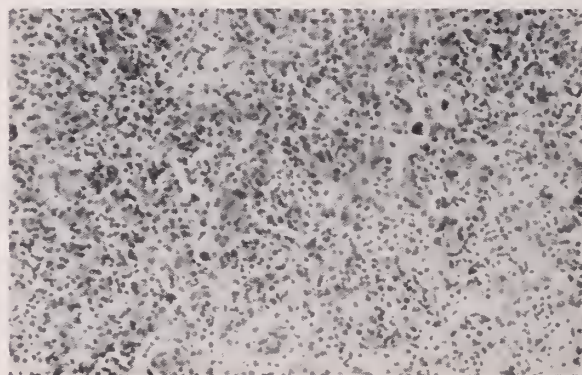


Fig. 5. Extreme hematopoiesis in the liver. Observe the large mitotic figures and the distortion of the hepatic parenchymal cells. Hematoxylin and eosin. X 130.

Anatomic Diagnosis:

1. Erythroblastosis fetalis.
 - A. Fetal hydrops.
 - B. Anemia, all organs.
 - C. Engorgement of all vessels by immature red cells.
 - D. Extrapericardial hemorrhage.
 - E. Extensive bilateral renal hemorrhage.
 - F. Hepatomegaly.
 - G. Infiltration of the pancreas by nucleated red cells.
2. Patent urachus.

SEROLOGIC FINDINGS

Blood was obtained from the mother on the second day following delivery and the serum set up with a series of 10 different fresh washed group 0 red cells. This procedure was accomplished by mixing 2 drops of serum with 2 drops of a 2 per cent suspension of the group 0 cells in a series of small tubes, incubating them at 37 degrees centigrade for one half hour, centrifuging at 500 r.p.m. for 1 minute and then reading the sediment pattern in the bottom of the tubes. The sediment was then gently resuspended and microscopic slide readings made. There was no agglutination whatever of any of the group 0 red cells. The mother's

red cells, tested on two occasions with known Rh negative cells as a control, were Rh positive. The father was found later to be Rh positive also.

DISCUSSION

There can be no doubt that the present case is a clear-cut example of erythroblastosis fetalis. The fact that the mother is Rh positive, and that her blood contained no demonstrable anti-Rh agglutinins, is of particular interest in view of our experience with other examples of this condition in Hawaii. We have personal knowledge of 5 cases of erythroblastosis fetalis (including the present one) in which the diagnosis was well established by clinical, laboratory and (in three of them) autopsy criteria. Three of these cases were briefly summarized one year ago³. The mother was Rh negative in two of them only, and Rh positive in the remaining three. In four of them the mother's blood serum was tested with group 0 red cells for Rh isoantibodies and in no instance could immune bodies be demonstrated.

It should be pointed out, however, that a number of Rh sub-groups are known to exist, and it is apparently possible for an Rh positive mother to become immunized to Rh positive fetal red cells of a different subgroup⁷. This concept has been offered to explain cases of erythroblastosis in infants born of Rh positive mothers. Further, Rh isoagglutinins in the mother's blood have been demonstrated in less than one half of the cases of erythroblastosis fetalis⁸, so that failure to find them does not necessarily rule out isoimmunization as the background for the disease. It does, however, cast some doubt on the safety of depending upon cross matching mixtures incubated at 37 degrees centigrade to rule out Rh incompatibility in obstetrical patients, and in patients receiving repeated transfusions of blood.

The number of cases in our series is of course too small to permit definite opinions one way or the other, but the observations we have made on them indicate nevertheless that we should keep an open mind on the subject of isoimmunization in erythroblastosis. They also emphasize that the classical picture of this disease may occur in infants born of Rh positive mothers, and that physicians should not dogmatically eliminate erythroblastosis on the basis of an Rh positive typing of the mother.

In the case reported a period of 7 years intervened between each consecutive pair of the three pregnancies; the mother had no abortions or miscarriages in the intervals, and received no blood transfusions. It is difficult indeed to conceive of much opportunity for isoimmunization of the mother to take place under these circumstances. As already pointed out, however, it is theoretically possible that she became immunized to a fetal Rh subgroup during her third and last pregnancy with resultant erythroblastosis of the offspring.

In any event the present case is important and worth recording because it occurred in a Chinese infant; it may be the second such case ever to be reported.

SUMMARY AND CONCLUSIONS

1. A case of erythroblastosis fetalis in a Chinese infant, possibly the second such case to be recorded in the literature, is presented.
2. Both parents are Rh positive and no isoagglutinins could be demonstrated in the mother's blood serum following delivery. Two previous pregnancies resulted in normal living children and a period of 7 years elapsed between the first and second and the second and third pregnancies. The mother had no abortions or miscarriages in the intervals and has never received a blood transfusion.
3. Several studies seem to indicate that Rh negative individuals are extremely rare in the oriental races. This finding is in accord with the seeming rarity of erythroblastosis fetalis in these races.
4. Four other examples of erythroblastosis personally observed in Hawaii are cited briefly. Since the mothers of three of these 5 cases (the present one is included) are Rh positive, physicians are warned not to be too sure of eliminating this disease from consideration on the basis of a positive Rh typing of the mother.

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AT A PACIFIC RED CROSS ARTS AND CRAFTS CENTER, Maj. Gen. Norman T. Kirk, the Surgeon General, sees convalescent soldiers regaining their skills. Accompanying Gen. Kirk are Brig. Gen. John M. Willis, Surgeon, Pacific Ocean Areas, and (behind Gen. Kirk) Col. Paul H. Streit, Surgeon, Central Pacific Base Command. Fashioning native island products under the direction of Red Cross supervisor Joan Farrel, Schuyler, Nebr., are, clockwise from left, Pfc. Ernie L. Holmes, Mayfield, Ky.; Pfc. Omar Schilling, St. Louis, Mo.; Sgt. Howard Labord, Los Angeles, Cal.; Sgt. Charles E. West, Cleveland, Ohio; Sgt. Wilce Hall, Dallas, Texas; Pfc. George W. Hobbs, Phoenix City, Ala.; Pfc. Sam Varisco, Montegut, La. (U. S. Army Signal Corps photo.)



U. S. ARMY SURGEON GENERAL, MAJ. GEN. NORMAN T. KIRK, on a tour of the Pacific Ocean areas, observes training of wounded soldiers at a Central Pacific convalescent center, as Sgt. Joseph P. Morgan, Long Beach, Cal., with left arm in cast, assembles a machine gun. His instructor, Pvt. George B. Matthias, Houghton, Wash., was a paratrooper with the 11th Airborne Division on Leyte, when a sniper got him in the leg. (U. S. Army Signal Corps photo.)

HAWAII MEDICAL JOURNAL

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EDITORIALS

POSTGRADUATE COURSE CONCLUDED

Nearly five hundred medical officers of the Army, Navy and Public Health Service, and over a hundred and thirty civilian physicians, paid an estimated 2,775 visits to the fourteen sessions of the Postgraduate Course of the Honolulu County Medical Society, held January 8 to 14, 1945, in Honolulu. These sessions consisted of four symposiums, on cardiovascular disease, neuropsychiatry, cancer, and diseases of the chest, and ten round table discussions, on general medicine, eye, orthopedic and neural surgery, gynecology and obstetrics, urologic surgery, allergy, abdominal surgery, otology, tropical diseases and skin diseases. Both the symposiums and the round table discussions were conducted by specialists in the fields concerned, selected from the armed forces for the most part, with a scattered representation of civilian physicians.

The Chairman of the Post-graduate Committee, Dr. C. M. Burgess, and the members of the Committee, Drs. Mossman, J. Lam, Sakimoto, Wilbar and Onstott, are to be congratulated on the all round excellence of the program and the arrangements. The Committee was particularly indebted to one of its members, Doctor Robert Onstott, Medical Director, U.S.P.H.S., who acted as intermediary between the civilian physicians and the chiefs of the Army and Navy medical services, Admiral Lucius W. Johnson, M.C., U.S.N., and General John Willis, M.C., U.S.A., in arranging for the services of the military participants. "Standing room only" was the rule at practically every session throughout the week. An interesting feature of the attendance was that it included representatives from forty-two States, the District of Columbia, and Hawaii.

Space does not permit us to name all of the men who contributed to the success of the program, but special mention must be made of three men whose cooperation and assistance really made the whole

affair possible: Colonel A. W. Oughterson, M.C., A.U.S., Lt. Col. Ed. J. Ottenheimer, M.C., A.U.S., and Captain M. J. Capron, M.C., U.S.N.R.

Many of the papers read at these meetings are to be published in forthcoming issues of the HAWAII MEDICAL JOURNAL.

GROUP CARE FOR CHILDREN

Children cared for in groups do not develop normally. This is the consensus of authorities on the subject of child development. Even at the age of two or three, blunting of their reactions is apparent. Individual, personal, parental attention and affection are indispensable to their proper mental and emotional growth.

The present tendency of mothers of small children and infants to deposit them during the day in child care centers while they hold down a full time job cannot be too strongly deplored. If their husbands are not gainfully employed; if they are widows; if they must work, in short, why then of course they must. But when they work merely because a well paid job is readily available, then their conduct is reprehensible. Their place is at home, caring for their children.

Patriotism is no defense. If it is patriotic for a woman to work whether she must work or not, it is certainly equally unpatriotic for her to contribute to the future mental ill-health of her offspring. It is a truism that the future is in the hands of today's children. "Post-war planning" must take this into account.

The new Child Guidance Clinic described by Dr. Wilbar in this issue of the JOURNAL is a forward step in community attention to the mental health of Hawaii's children. Let us not step backward in this respect by condoning unessential group care for them.

LEPROSY IN HAWAII

BOARD OF HOSPITALS AND SETTLEMENT WAR EMERGENCY ACTIVITIES 1941-1944

Pre-War Considerations

Under war emergency conditions, plans for the maintenance and supply and protection of all persons segregated and confined at Kalaupapa Settlement on Molokai, and at Kalihi Receiving Station in Honolulu, warranted the fullest consideration first, in the matter of the procurement and delivery of hospital and general supplies for Kalaupapa and second, a plan for the protection and disposition of the patients and staff at Kalihi.

As of June 30, 1941, the following groups of persons were under the care and jurisdiction of the Board of Hospitals and Settlement:

<i>Active Leprous Patients</i>	419
At Kalaupapa Settlement, Molokai.....	359
At Kalihi Hospital, Honolulu.....	60
<i>Patients on Temporary Release</i>	166
Kalaupapa Settlement	31
Honolulu District	72
Rural Oahu & Outside Islands.....	63
<i>"Kokuas"* at Kalaupapa only</i>	9
<i>Non-Leprous Children of Leprous Parents</i>	143
(Wards of the Territory during minority)	
In Honolulu	65
Rural Oahu & Outside Islands.....	78
TOTAL OF ALL GROUPS	737

Kalaupapa Settlement

Kalaupapa Settlement on the Island of Molokai is ideally located and well equipped for the care of persons afflicted with leprosy. The various facilities now established at the Settlement can well take care of an added number of patients who might be evacuated from Kalihi, with but little expansion necessary. *No housing shortage exists at the Settlement*, due to the continuing decline of the number of leprosy patients in the Territory.

At Kalaupapa, in anticipation of contingencies under a National Emergency, hospital supplies for a six months' period were ordered, general supplies and provisions also ordered in excess of usual current needs, additional warehouse space provided in existing buildings, and provision made for additions to the fuel oil and gasoline storage facilities. The usual

program of repairs was accelerated and expanded to provide some additional quarters. New areas were added to the vegetable gardens, and increased activities promoted in local fishing and poultry, hog and cattle raising.

The first real shock of the emergency situation was the suspension of the long established means of transportation between Honolulu and Kalaupapa—the Inter-Island steamer "Hawaii" discontinued its regular weekly freight and passenger service following its last trip on November 25, 1941, and the Inter-Island Airways cancelled further calls of its planes at the Kalaupapa Airport, which shortly thereafter was rendered unserviceable by order of the U. S. Army Engineers. Thus the matter of transportation to serve Kalaupapa immediately became a matter of great urgency.

In the period from June 30, 1941, to the above date of suspension of service, November 25, 1941, the steamer "Hawaii" did, however, deliver approximately 970 tons of general cargo to the Settlement, much of which was made up of reserve stocks of provisions and supplies for medical and general use.

Immediately following the withdrawal of the steamer "Hawaii" and the plane service, arrangements were made with privately owned sampans, under charter, to engage in the service to Kalaupapa. This was augmented on two occasions by shipment of 40 tons each, delivered by the tender "Kukui," through the courtesy of the U. S. Coast Guard, and by one trip of the steamer "Hawaii" by cooperation of the U. S. Army, with a transfer of 35 patients from Kalihi and 110 tons of freight made up of patients' effects, school and institutional equipment, etc.

On May 27, 1942, the Sampan "Kalawao," recently purchased by the Territory for this run, made its first trip to Kalaupapa, thus eliminating the further use of privately owned craft which had proven unsatisfactory and costly.

In this period from December 1, 1941, to June 30, 1942, approximately 700 tons of mixed freight was delivered by boat from Honolulu and in addition, fresh beef, vegetables and certain other emergency supplies were brought in from leeward Molokai during the first three months of the period. All such supplies were, of necessity, brought down the Pali Trail, a descent of 1,600 feet, by pack animals.

* Helpers, from the verb *kokuu*, to help, also to acquiesce, concur.

By June 30, 1942, all reasonable requirements had been currently met and on this date, reserve food supplies for approximately six months and hospital supplies for a year or more were on hand at the Settlement. Thence to the date of this report, the matter of the procurement of materials and supplies in Honolulu, and the transportation to Kalaupapa, proceed in a relatively satisfactory manner.

Funds for the purchase of the Sampan "Kalawao" were made available April 6, 1942, by Governor Poindexter, by allotment from the appropriation—Hawaii Defense Act '24, Special Session Hawaii 1941, of the General Fund—

"For the purchase and reconditioning of one 65-foot Diesel Sampan for transporting freight and supplies to Kalaupapa."

On October 15, 1942, the Kalawao School was established at Kalaupapa for the 32 school children evacuated from Kalihi, in cooperation with and under the direction of the Department of Public Instruction which provided 2 teachers and equipment, and set up an appropriate program of academic, domestic science and vocational work.

Kalihi Hospital

Kalihi Receiving Station and Hospital, on the Island of Oahu, is located in the Kalihi District at the water's edge between Honolulu Harbor and Pearl Harbor. It is within the limits of military targets and in the shadows of the bomb-release line. Should hostilities ever occur the patients should be evacuated from this hospital.

The war emergency situation has been felt quite severely at Kalihi Hospital, with various radical changes and adjustments carried out upon the recommendation of the Military Authorities.

Governor Poindexter and the members of the Board concurred in the plan that the Kalihi Receiving Station should continue to function, as such, under the legal requirements for its operation, and that provision be maintained for the hospitalization and treatment of a limited number of patients, the majority of the patients at Kalihi to be transferred to Kalaupapa, including all the children, and that the school facilities be also transferred to Kalaupapa.

It was further planned that additional small groups of patients be transferred from time to time to Kalaupapa, as new patients are entered at Kalihi, in order to keep the number there maintained at a minimum of approximately 20 and, further, that in case of military necessity, suitable provision be made at a location outside of the evacuation zone, for the evacuation of patients and personnel then remaining at Kalihi.

Air raid shelters, of sufficient capacity to accommodate patients and staff, were constructed in the com-

pound in March of 1942; and also, late in 1942, an evacuation unit, with provision for housing and feeding about 30 patients and staff, was constructed in Kalihi Valley. Both units were provided by the Office of Civilian Defense.

On May 15, 1942, of the 55 patients at Kalihi, 35 patients, including all the children, were transferred to Kalaupapa on the steamer "Hawaii," assigned for this purpose by the U. S. Army, accommodations having been previously provided at Kalaupapa. This transfer was satisfactorily carried out in all respects, with but 20 patients then remaining at Kalihi.

The activities of the U. S. Leprosy Investigation Station, located within the Kalihi compound and long conducted by the U. S. Public Health Service, were suspended, the personnel transferred to other Federal fields and the Station closed as of June 13, 1942. It is the earnest hope of this Board that the Territory, at the earliest possible date, may again have the advantage of this important service in the field of leprosy. Medical officers of the U. S. Public Health Service were designated Attending Physicians at Kalihi Hospital in full charge of the medical care and treatment of all patients. Thus with the closing of the Station this splendid service was terminated. Subsequently the Public Health Service assigned one of its medical officers for part-time duty at Kalihi and this arrangement continues to date.

General Administration

No administrative reorganization has been required as a result of the emergency, but reallocation of duties has been effected in many cases and replacements, *when available*, made to fill the many vacancies caused by those entering military service, retirement and resignations:

ON MILITARY LEAVE—

<i>Name</i>	<i>Position</i>	<i>Date</i>
Hercules Mendonca*	Clerk, Kalihi Hospital	12/ 9/41
Dr. E. K. Chung-Hoon†	Board's Physician	12/10/41
Arthur Lee	Clerk, General Office	11/14/41
David Arakawa	Clerk, General Office	7/ 1/44
Satoru Ochiae*	Clerk, Kalihi Hospital	12/ 9/41
Solomon Kolii	Watchman, Kalihi Hospital	4/ 6/44
George Palolo	Cook, Kalaupapa	12/ 9/41

RETIREMENT—

Dr. J. T. Wayson*‡	Board's Physician	9/25/43
Kaipo Kaiwi, R.N.†	Supv. Nurse, Board's Clinic	1/ 7/44

* No replacements.

† Temporary part-time replacement.

‡ Others have been replaced.

‡ Deceased.

Of the 70 resignations in the department from October 1941 to date, exclusive of military leave and

retirement, the majority of the employees sought other and more lucrative war time work; other separations were for normal administration reasons. Even in peace times, a relatively large turnover of employees has been the case at Kalaupapa.

The manpower shortage at Kalaupapa has been offset to some degree by a greater and more active participation by the patients in the work program at the Settlement under an improved wage scale.

The department continues to be handicapped by the vacancies in several important positions, and for those vacancies replacements have not been available.

Fortunately the needs of this department were such that no great assistance was required of other departments or agencies. This was particularly the case as new procedures were established and recognized and departmental action adapted thereto.

H. A. KLUEGEL, Superintendent
of Hospitals and Settlement

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NEUROPSYCHIATRIC COMMENT

A CHILD GUIDANCE CLINIC IN OUR COMMUNITY

Thirty-six years since the founding of the first child guidance clinic, the Territory of Hawaii is about to have established its first such clinic. In the overall picture of child guidance work in the United States, this will add one more clinic to approximately 300 now in existence in our nation. However, in our Territory various aspects of mental hygiene among children have been and are still being carried on by a number of agencies, including the juvenile court, psychologic clinic, schools, child welfare agencies and others. Such work has not heretofore been integrated on a community level, and it is to be hoped that a child guidance clinic will accomplish that end.

Much work of a child guidance nature is done by the individual physician among his own patients. The individual private physician, in his daily work among his patients carries a large portion of the burden of helping children to attain better mental health. In innumerable ways in the course of treating physical ailments he is called upon to consider and make decisions concerning the emotional and social problems of the parents as well as the children. Many times, however, the physician finds himself handicapped by lack of time to obtain a detailed history of the family and other background factors leading up to behavior disturbance. Often, he would welcome being able to turn over to someone else for special study an adolescent youngster whose family he has known for years, but who has for no apparent reason become severely rebellious and uncontrollable. In other cases the physician may, after complete examination, find no organic basis for such symptoms as enuresis, poor school work or chorea-like movements, and may recognize the desirability of using specialized diagnostic methods to uncover underlying psychogenic factors. The Child Guidance Clinic will be available for referral of such cases by the physician, and will send him reports of findings.

A well-organized and well-run child guidance clinic, besides studying the individual children who show lack of adjustment to their environment as evidenced by their behavior in their homes or schools or elsewhere in the community, also establishes functional and cooperative connections with the various agencies concerned with adapting the child satisfactorily to his surroundings and to the people with whom he must live. We all know that the best time to effect a preventive program against either physi-

cal or mental maladjustments is during the period of childhood. Attitudes and personality trends are developing then and have not become too fixed. It is true, however, that working with the problems of children means working with the adults who control these children, especially with the parent of the child, who influences the child more than any other individual. The psychiatrist, psychologist and social worker, making up the child guidance clinic, realize that the responsibility of child training must be placed upon the father and mother. The teaching of the parent, then, is probably the prime objective of the case work in child guidance clinics, although the teacher, social worker, church worker or other individuals who intimately affect the child's life must often come into the picture. The importance of these latter is, of course, more evident in children who are dependent for their living upon social agencies, institutions or foster homes because of having no parent to look after them for one reason or another.

True child guidance work such as set up in clinics with well trained personnel, considers the child as a whole rather than simply his set of symptoms. The discontinuation of certain antisocial behavior does not necessarily correct the child's mental outlook and insure him of becoming a well-adjusted citizen in the community. The total picture of the physical and mental experiences and reactions which lead to the total functioning of the individual child needs to be considered so that the basic pattern for his teaching and everyday environment can be outlined to keep him from becoming delinquent from the viewpoint of society and make the maximum use of his mental and physical makeup.

Let no one doubt the need for such guidance work to prevent individual mental breakdown or maladjustment. Over half of the hospital beds in the country are occupied by patients suffering from mental illness and still more beds are required to meet the demands of long waiting lists. About 75,000 new patients are admitted annually to governmental institutions for the mentally ill. These large figures do not in general include the constitutionally inadequate, the psychoneurotic, the misfits, the alcoholics and the drug addicts, estimates on whom are not available, but which, as all physicians know, occur in large numbers in any community. Of registrants with the Selective Service between 18 and 37 years of age who were rejected as 4-F's up to June 1, 1944,

30.4 per cent were rejected because of mental disease or mental deficiency.

The war has made it more difficult than ever to maintain mental equilibrium in this community as well as elsewhere. Changes of employment, restrictions of blackout and the curfew, excessive working hours and difficulties in obtaining social relaxation have all aided in causing unusual mental strain. Whether or not these factors will cause a severe type of mental breakdown ultimately cannot as yet be determined, but undoubtedly they increase the difficulties of mental and social adjustment to community life.

The need for child guidance work in this community is extensive. Such a clinic should completely cooperate with physicians and public and private organizations concerned with the field of child behavior and should aid in coordinating the organizational activities in this regard. The cooperation must, of course, be mutual and work both ways if we are to accomplish the desired objectives of child guidance work, such as has been done in a number of mainland communities where child guidance clinics have been established.

C. L. WILBAR, JR., M.D.
President, Board of Health

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Literature and samples on request

COUNTY SOCIETY REPORTS

HAWAII COUNTY MEDICAL SOCIETY

The 233rd meeting of the Hawaii County Medical Society was held at the Hilo Memorial Hospital on Thursday, December 8, 1944. The meeting was called to order by the President, Dr. M. H. Chang, at 7 P.M. and the minutes of the previous meeting were read and approved.

Dr. Wm. M. Shanahan, the guest speaker of the evening, opened the meeting to general discussion. Members of the society asked questions in regard to procedures and methods used in the treatment and care of the mentally ill. He emphasized chiefly the importance of not committing patients unless absolutely necessary but rather referring them to him at The Queen's Hospital. This procedure, in many cases, would prevent commitment and also speed the treatments which are given and in many cases results in dramatic cures or improvements in the patient. The general interest in the discussions of the evening was so great that it was moved and unanimously carried that all business be dispensed with and our next meeting will be entirely a business meeting. There were a few matters, however, which needed attention and were taken care of before the meeting was adjourned. One of these was the appointment of Dr. Loo to replace Dr. Keay on the Board of Census.

Reports from other committees are to be taken up at the next meeting.

A copy of the revised fee schedule was turned over to Dr. Leslie. It was recommended that he make copies of this fee schedule and send them to members of this Society so that they may be prepared to discuss the subject at the next meeting.

Meeting was adjourned at 9:45 P.M.

R. T. EKLUND, M.D.,
Secretary.

The 234th monthly meeting of the Hawaii County Medical Society was called to order by Dr. M. H. Chang in the Hilo Memorial Hospital Staff Room at 7:10 P.M., January 4, 1945.

In the absence of the secretary, Dr. T. Yoshina was appointed secretary pro tem. The minutes of the last meeting were read, approved and placed on file.

Dr. Chang announced that the AB Factors (Lilly) were available at the Hilo Memorial Hospital to all

physicians on the island. He also announced that the Society has not received any communication from the Hawaiian Airlines, Limited concerning the transportation of mentally ill patients on the planes.

Dr. Patterson moved and Dr. H. Sexton seconded that Dr. Thomas Keay, who retired and left the island, be made an honorary member of the Society. This was unanimously carried and the secretary was directed to inform Dr. Keay of this action.

The applications to membership of Dr. Joseph Simon and Dr. Evelyn G. Ross who are transfers from the Honolulu County Medical Society were approved unanimously.

Dr. S. R. Brown, Chairman of the Legislative Committee, reported on various desirable legislation as proposed by the Psychiatric and Neurological Committee of the Territorial Medical Association of which Dr. Kepner is the chairman. Dr. Brown stated that he found no objections to the intent of such proposed acts similar to the Briggs Law of Massachusetts, Sexual Psychopathic Act, Uniform Expert Testimony Act and the Youth Correction Authority Act. Since the literature from Dr. Kepner was merely of informative nature, no action was taken. Dr. Orenstein moved and Dr. L. L. Sexton seconded that the Psychiatric and Neurological Committee of the Territorial Medical Association be thanked and notified of the receipt of the information.

Dr. William Leslie, Chairman of the Fee Schedule Committee, opened the discussion on the Industrial Accident Fee Schedule of the Honolulu County Medical Society and the Hawaii Workmen's Compensation Association. The members were interested to learn what would be desirable fees locally for some of the common daily practices, such as office visits, house calls, obstetrical fee, appendectomies, etc., and the chairman was instructed to investigate and report back at the next meeting. Dr. A. T. Roll was appointed by the Chair to fill the vacancy on the Fee Schedule Committee, due to the absence of Dr. Crawford who is on the mainland.

Dr. William Leslie, Chairman of the Tuberculosis Survey Committee, outlined the present plan of the coming tuberculosis survey program. After lengthy discussion, the committee was asked to enumerate the recommendations which it wishes the Society to act upon at the next meeting.

Dr. Leo Bernstein, Chief Health Officer for the Is-

land of Hawaii, reported that the Blood Wassermann test would be run along with the tuberculosis survey.

Dr. Leo Bernstein stated that the EMIC program is operative now and includes all physicians and approved hospitals. It was pointed out in the discussion that some of the physicians were not informed of this and the wives of the servicemen were referred to the Mt. View Army Hospital or the services were paid for by the women themselves who chose to go to the Hilo Memorial Hospital. Dr. C. B. Brown moved that Dr. Samuel Wishik, Director of the Bureau of Maternal and Child Health be requested to inform each physician on the Island on the present set-up and to notify him immediately of any changes in the future in the EMIC program. This was seconded by Dr. H. Sexton and was carried unanimously.

Dr. Leo Bernstein read Dr. Wishik's communication concerning the consultation service for indigent and marginal patients which is available through the Board of Health.

The meeting adjourned at 9:40 p.m.

TERUO YOSHINA, M.D.,
Secretary, pro tem

KAUAI COUNTY MEDICAL SOCIETY

A special meeting of the Kauai County Medical Society was held on December 11, 1944, at 7:00 P.M. at the Wilcox Hospital. Dr. Eric Fennel, President of the Hawaii Territorial Medical Association, was the guest of honor. Dr. Fennel addressed the Society on various matters pertaining to the Territorial Association and County Societies and dwelt particularly on matters of public policy and legislation. Dr. Fennel's address was received with interest and he was invited to be present at a meeting of the Society with Kauai's legislators and Board of Supervisors to be held on December 13. No routine business was considered at this meeting.

The regular monthly meeting of the Kauai County Medical Society was held on December 13, 1944, at the Lihue Hotel at 6:30 P.M. in the form of a dinner meeting. Dr. Fennel, President of the Hawaii Territorial Medical Association, Kauai's legislators, and members of the Kauai Board of Supervisors were guests of the evening. The purpose of the meeting was to enable the Society to establish an acquaint-

tance with the legislators and supervisors and to inform these lawmakers that the Society is definitely interested in being notified of, and consulted on, any proposed legislative action concerning medical matters. Dr. Fennel presented the general viewpoint of the physician in regard to medical legislation. A lively discussion was maintained throughout the evening and it was generally expressed that the meeting would be productive of closer and better relationships between the physicians and the law-makers in the future. No routine business was considered at this meeting.

DAVID LIU, M.D.,
Secretary

MAUI COUNTY MEDICAL SOCIETY

Regular meeting held January 9, 1945 at Wailuku Hotel. Dr. Patterson presided. Members present: Drs. Dunn, Balfour, K. Izumi, Shimokawa, Sanders, T. P. Chow, E. L. Chow, McArthur, Lightner, Osmer, Kanda, Patterson and von Asch.

Dr. Patterson presented a report for the Library Committee. He reported that Prior & Co. are revising our copies of Tice & Lewis for our library and are bringing them up to date. He also mentioned that we are getting several hundred journals from the Honolulu County Medical Library.

Dr. Sanders, Chairman of the Social Committee, gave a report on the annual dinner party. It is to be held at the Country Club and the tentative date is February 23.

Dr. Patterson then turned the meeting over to Dr. Fennel, President of the Hawaii Territorial Medical Association, who gave a talk covering various phases of the activities of the Territorial Association. He covered the topics of Fee Schedule, Board of Health activities, Dr. Kepner's Model Bill which may come up in the next legislature, Pre-marital Examinations, Registered Laboratory Technicians Bill, E.M.I.C., H.M.S.A., and University of Hawaii Technicians Training Course. He also gave a brief talk on Electro-colorimeters, sedimentation rates and Weltmann reactions.

Meeting adjourned.

GEORGE VON ASCH, M.D.
Secretary

NOTES AND NEWS

SCIENTIFIC PAPERS APPROVABLE LOCALLY

We have recently been informed by Admiral Lucius W. Johnson and Major Millard S. Purdy that papers intended for publication in the HAWAII MEDICAL JOURNAL may be approved for publication through the local Public Relations officials instead of having to be sent to Washington for this purpose. Such papers may be submitted directly to the District Medical Officer, Admiral Johnson, for the Navy, or to Lt. F. W. Tuohy, H.Q., U.S.A.F.C.P.A., A.P.O. 958 for the Army. Or, if the authors so desire, the JOURNAL will be glad to assume responsibility for securing the proper approval.

PERSONALS

It has recently been announced that COMDR. PAUL WITHINGTON, M.C., U.S.N.R., has been promoted to captain. He is now stationed here at the navy dispensary of the old naval station. CAPT. WITHINGTON holds the highest rank of all the many Honolulu physicians and surgeons now serving in the armed forces. CAPT. WITHINGTON has been on active duty in the navy since June 1941, at which time he held the rank of lieutenant commander. COL. CLARENCE E. FRONK is believed to have held the highest army rank. He is now on inactive service, having returned to private practice last year after serving as medical adviser to the territorial selective service.

COL. WILLIAM S. MIDDLETON, chief consultant in medicine for the American Army's European Theater of Operations and former dean of the University of Wisconsin Medical School, has been named a Fellow of the Royal College of Physicians of Great Britain, a distinction now held by only two other native Americans. DR. MIDDLETON has been an honorary member of the Honolulu County Medical Society since 1935.

DR. T. YOSHINA was recently appointed chief of staff of the Hilo Memorial Hospital. DR. HENRY B. YUEN and DR. HAROLD M. SEXTON will assist DR. YOSHINA as vice chief and secretary, respectively.

On January 11, 1945 a daughter, Nancy Lynne, was born to DR. and MRS. HAROLD M. JOHNSON of Honolulu.

Marilyn Adelaide, the first child of DR. and MRS. HOMER W. HARRIS of Lihue, Kauai, was born on December 10, 1944.

DR. MARVIN BRENNECKE of Koloa, Kauai and DR. ROGERS LEE HILL of Honolulu were accepted into fellowship in the American College of Surgeons during 1944.

DR. WALTER M. OZAWA, Territorial Hospital, was promoted from associate member to full membership in the American Psychiatric Association at the meeting in Philadelphia in May, 1944.

DR. R. D. KEPNER has been appointed by Governor Stainback to membership on the executive committee of Veterans' Advisors. This was on the recommendation of Mr. A. L. Castle, chairman of Veterans' Advisors.

DR. PHILIP S. ARTHUR is the new assistant in the office of DR. JESSE W. SMITH in Honolulu. DR. ARTHUR graduated from Georgetown College and University Medical School in 1938, then spent eighteen months at Kahuku with DR. ROTHWELL. He returned to the mainland for a further internship and residency of eighteen months. In July, 1944 he completed a three-year fellowship in Radiology at the Georgetown University Hospital.

HEALTH DEPARTMENT ENLARGED

The staff of the Territorial Board of Health has recently been augmented by the addition of new members in various fields, among whom are the following:

DR. MARTHA W. MACDONALD, child psychiatrist, is now associated with DR. WILLIAM SHANAHAN, acting director of the Bureau of Mental Hygiene. DR. MACDONALD is a graduate of the University of Pittsburgh and has recently held the position of Psychiatric Services Adviser, Division of Research in Child Development, Children's Bureau, Washington, D. C.

MISS LOUISE BAILEY, physiotherapist, has come to aid the work of the Bureau of Maternal and Child Health and the Crippled Children's Bureau. After studying at Sargent College, Boston University and Harvard Medical School, MISS BAILEY became a student of Dr. Winthrop Phelps' Institute for Cerebral Palsy in Baltimore, Maryland. Here in the Islands her work will be particularly with children suffering from cerebral birth palsy.

DR. ALLSTON O. GOURDIN, who will do venereal disease control work here, has recently been a special consultant in gonorrhea for the U. S. Public Health Service in Washington, D. C. Born and educated in Hongkong, China, Dr. Gourdin practiced medicine there from 1928 to 1941. During 1942 he worked with the American Red Cross among civilian prisoners interned in Hongkong.

MISS LAURA DRAPER, now head of the Public Health Nursing Bureau, graduated from Wellesley College and was trained in nursing at Philadelphia General Hospital and Simmons College. For the last ten years she was Director of the Community Health Service in Minneapolis, Minn. Previously she had been supervisor of nursing in Pennsylvania for the Metropolitan Life Insurance Company.

MR. QUINCY CARLISLE TUCKER has retired from the navy after thirty years of clinical and research work in Samoa, Nicaragua and elsewhere. He is now laboratory administrator for the island of Maui.

JAMES THOMAS WAYSON, M.D.
1870-1945

Dr. James Thomas ("J. T.") Wayson died on January 12, 1945, of bronchial pneumonia. He was seventy-four years old, and had been in enforced retirement, owing to poor health, since September, 1943. His death brought to a close a distinguished career in the fields of public health, leprology and dermatology in the Territory of Hawaii over a period of more than fifty years.

Dr. Wayson was born in Port Townsend, Washington, in 1870. His father was an engineer captain in the United States Coast Guard, and it was this circumstance, oddly enough, which eventually led to Dr. Wayson's making his home in Hawaii.

Following his graduation from the University of California Medical School in 1891, and a house physicianship in a Portland, Oregon, hospital, Dr. Wayson entered the United States Revenue Cutter Service as a surgeon. He came thus to Hawaii, after a cruise in Alaskan waters, on November 25, 1894.

He left the Service at this time, and following the revolution, in January, 1895, he accepted a commission as Captain in the Medical Department of the First Regiment of the Hawaii National Guard. In the same year he also became medical superintendent of the Kalihi Leprosarium. He relinquished this post after two years to enter private practice, though he continued to serve the government on a part-time basis. He married Delia Walcott Sheehy of Honolulu, on November 25, 1897, and they have had two children, India and Eleanor, both now married.

Dr. Wayson's career in public health and leprology really began in 1910, when he became for the second time medical superintendent of Kalihi Leprosarium; the following year he also assumed the duties of City and County Physician for Honolulu. In 1915 he left the Leprosarium and in 1918 he exchanged the position of City and County Physician for that of Sanitary Expert with the Board of Health. In 1921 he was promoted to General Health Officer, and in 1921 he became Assistant Administrator of the Board of Health, a position he held until 1931.

In 1931 the control of the Territorial leprosaria at Kalihi and Kalaupapa was removed from the Board of Health and vested in a separate governmental agency, the Territorial Board

of Leper Hospital and Settlement. Dr. Wayson became the first Chief Physician for this board, and held this post until his official retirement, in September, 1943. It would be difficult to exaggerate the importance of his accomplishments in the control of leprosy during this period. At the time he assumed office the whole problem of leprosy control was in a turmoil; segregation was highly unpopular, and diagnoses had often been contested, sometimes in court. Little attention was paid to already-diagnosed cases, and scant effort was being made to follow paroled ones. It was in large part owing to Dr. Wayson's efforts, and to those of the first members of the Board, that the "leper" came to be regarded as a "leprosy patient" and to be given some measure of sympathy and personal attention instead of the simple confinement that had hitherto been the rule.

Dr. Wayson pioneered in the use of solid carbon dioxide for the treatment of lepromatous nodules. In 1910 he secured two tanks of the gas from Chicago, following Pusey's lead in the use of this material for destruction of tissue, and demonstrated its value in destroying excess lepromatous granulation tissue. His work was reported in the Report of the Territorial Board of Health for 1912.

In 1906, as President of the then Hawaiian Territorial Medical Society, he introduced the since prevailing practice of post-graduate lectures here by inviting Dr. A. W. Morton of San Francisco to visit Honolulu and demonstrate spinal anesthesia, which had never been employed here prior to that time.

Dr. Wayson was a Mason, an Elk, and an Odd Fellow. He belonged to the Honolulu County Medical Society and the Hawaii Territorial Medical Association, and was a Fellow of the American Medical Association. He had belonged to the American Academy of Dermatology and Syphilology since its founding, and was also a member of the Society for Investigative Dermatology and of the Royal Society of Tropical Medicine and Hygiene. He was a charter member and the first president of the Hawaii Dermatological Society. Most of all, he was a kindly, genial, witty, wise practitioner of cutaneous medicine and student of leprosy (he always denied being a "leprologist"), and he will long be remembered, and missed, by his many friends on the mainland and in Hawaii.

HARRY L. ARNOLD, JR., M.D.

LIBRARY NOTES

THE HONOLULU COUNTY MEDICAL LIBRARY

MRS. ETHEL HILL, Librarian

MISS DORIS T. YASUTAKE, Library Assistant

8:00 A.M. - 4:30 P.M. Phone 65370 7:30 P.M. - 9:30 P.M.

RECENT ACQUISITIONS

By Purchase:

- Best, Charles H.: *Physiological basis of medical practice*. 3rd ed. 1943.
Grant, J. C. B.: *An atlas of anatomy*. 1943.
Manson-Bahr, Sir Philip: *Synopsis of tropical medicine*. 1943.
Stokes, J. H.: *Modern clinical syphilology*. 3rd ed. 1944.

From THE CLINIC (subscriptions)

- Archives of Ophthalmology
Archives of Otolaryngology
Archives of Pathology

From MEDICAL GROUP (missing and duplicate copies)

- American Journal of the Medical Sciences
American Journal of Surgery
American Journal of Roentgenology
American Journal of Obstetrics and Gynecology
American Journal of Diseases of Children
American Heart Journal
Annals of Internal Medicine
Annals of Surgery
Archives of Pediatrics
Archives of Surgery
Archives of Internal Medicine
Bulletin of the American College of Surgeons
Digest of Treatment
Human Fertility
Illinois Medical Journal
Journal of Urology
Quarterly Bulletin of Sea View Hospital
Radiography and Clinical Photography
Surgery
Surgery, Gynecology and Obstetrics
United States Naval Medical Bulletin
Western Journal of Surgery

From DR. H. L. ARNOLD, SR.

- Medical Classics (complete file)

From DR. F. L. PLADWELL

- Essays in the history of medicine. 1944.

From the University of Iowa

Berg, C. D.: *Laboratory manual of biochemistry*. 6th ed. 1944.

* * *

Following is a partial list of journals with missing copies needed to complete our files. If any doctor has these or others to give the Library, they will be gratefully received. The County Societies of Maui, Kauai and Hawaii are actively interested in building up their journal files, and duplicate copies are always offered to them for selection.

American Heart Journal

- 1934 v.9, No. 1-4, 6
1935 v.10, No. 1, 2, 4, 5
1936 v.11 & v.12

American Journal of Cancer

- 1932 v.16, No. 6
1933 v.18, No. 1, 2, 4, 6

American Journal of Clinical Pathology

- 1937 v.7, No. 6
1939 v.9, No. 5
1940 v.10, No. 1

American Journal of Diseases of Children

- 1920 v.20, No. 5, 6
1921 v.21, No. 3; v.22, No. 1

American Journal of Digestive Diseases

- 1942 v.9, No. 10

American Journal of Obstetrics and Gynecology

- 1931 v.21, No. 3

American Journal of Ophthalmology

- 1939-1942 v.22-v.25
1943 v.26, No. 2-12

American Journal of Pathology

- 1926-1934 v.2-v.10
1942 v.18, No. 3-6

American Journal of Psychiatry

- 1921 v.1, No. 1, 2
1927 v.6, No. 4
1928 v.7, No. 3, 5
1929 v.8, No. 1, 5
1930 v.9, No. 2, 3
1931 v.10, No. 4
1934 v.13, No. 1, 4-6
1935 v.91, No. 2, 3
1936 v.92, No. 6
1937 v.93, No. 6
1939 v.96, No. 6
1942 v.98, No. 6
1943 v.99

American Journal of Roentgenology

1923 v.10, No. 6, 8
 1926 v.16, No. 5
 1929 v.21, No. 2, 5
 1930 v.23, No. 4
 1934 v.32, No. 4
 1935 v.34, No. 1
 1937 v.37, No. 5
 1938 v.39, No. 1, 6; v.40, No. 1, 3, 4
 1942 v.47, No. 2, 5

American Journal of Surgery

1932 v.15-v.18

1933 v.19, No. 1, 2; v.20, No. 1, 2; v.21, No. 1-3;
 v.22, No. 1-3
 1935 v.27, No. 1
 1940 v.49, No. 1

American Journal of Syphilis

1932 v.16, No. 1, 2, 4
 1933 v.17, No. 1-4

American Journal of Tropical Medicine

1931 v.11, No. 1, 5, 6
 1943 v.23, No. 4-6

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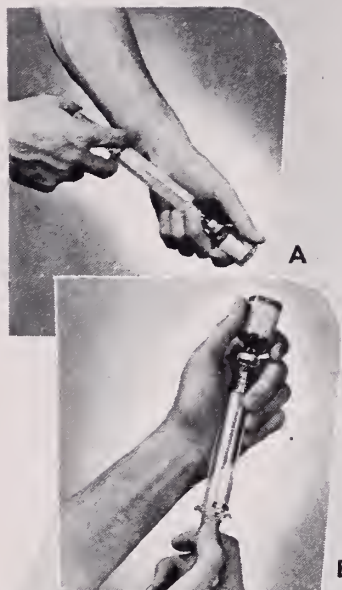
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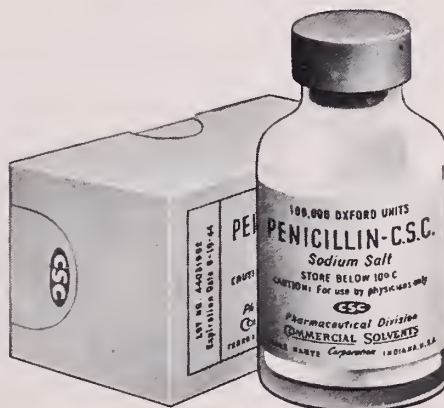
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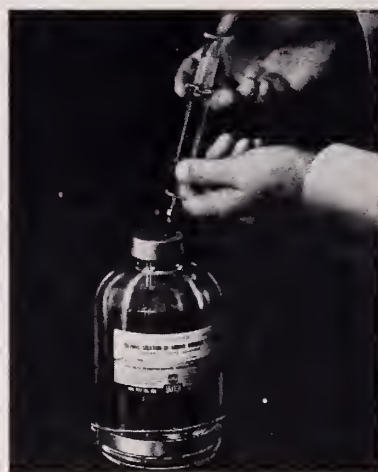
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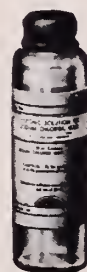
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**Proc. Soc. Exp. Bio. and Med.*, 1934, 32, 241-245.

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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66:1-11, July 1943.

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1. Tracy Putnam: Convulsive Seizures, p. 4, J.B. Lippincott Co., 1943.



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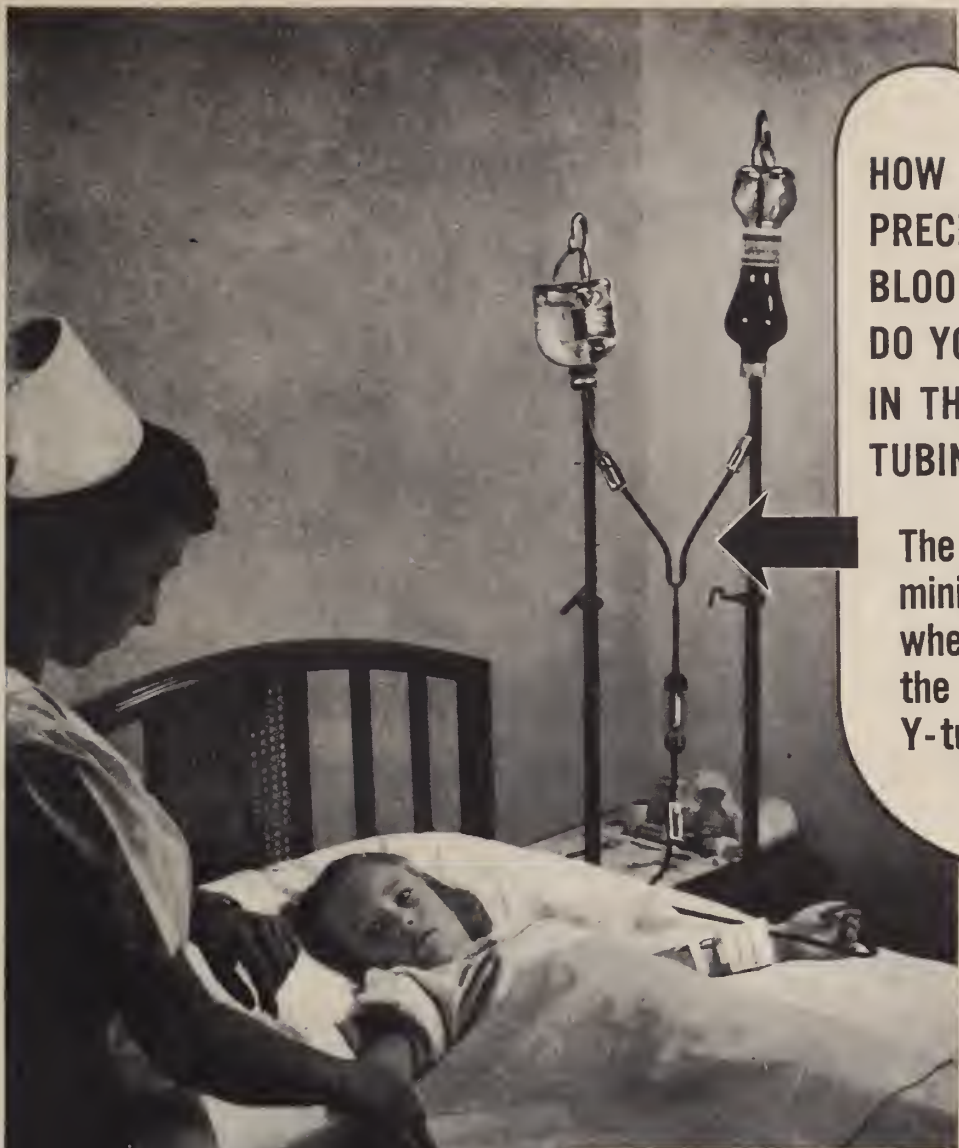


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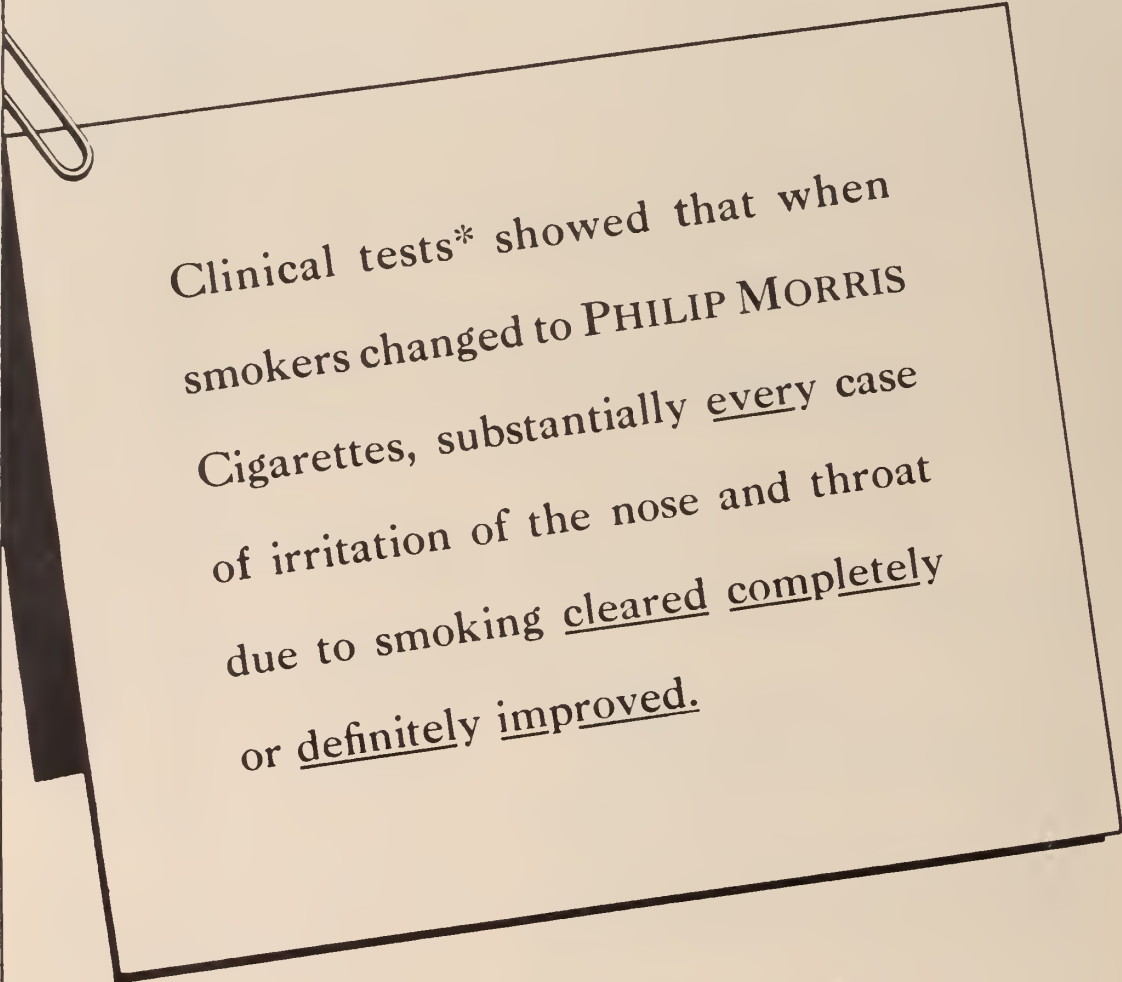
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Some of the Surgical Lessons Learned in World War II

CAPTAIN HOWARD K. GRAY, M.C., U.S.N.R.

When one contemplates the human anguish and misery caused by death, injury (with or without mutilation), disease, deprivation in many instances of even the bare necessities of life, disruption of homes, property damage, personal and governmental indebtedness of staggering proportions, loss of many of our spiritual and moral values, and the many other destructive sequelae of war too numerous to mention, it is with great pleasure that one is privileged to speak, even though sketchily and superficially, of some of the lessons learned in the present war which benefit rather than destroy our fellow man.

That advance in scientific knowledge is the interest received on an investment of unlimited effort on the part of scoreless investigators and observers is readily apparent, but how much greater would have been the result if the same effort required in the prosecution of a war had been expended in time of peace toward the solution of problems yet unsolved. Significant advances *have* been made in surgery and internal medicine in the past war years, and they stand in sharp contrast to the black backgrounds. The most significant advances have been made in the preceding years of peace, however, and not infrequently the fact that the groundwork for scientific progression has been laid during these years of peace has been overlooked. Too much credit cannot be given those who have taken advantage of opportunities afforded them in the present circumstances and by so doing have added to our total fund of information. Even more credit should be heaped upon those who have produced tirelessly and without acclaim the building materials upon which the structures have been erected about which we wish to speak to you this evening.

SURGICAL SHOCK

A case in point is the condition referred to as "surgical shock." Since 1795, when James Latta first introduced the term "shock," numerous hypotheses have been advanced to explain this condition. It must be admitted that not all factors concerned in the production of surgical or traumatic shock are understood fully; yet an understanding of the established physiologic bases for present day hypotheses regarding shock is essential to the surgeon or to the internist on whom may rest the responsibility of dealing with this condition. Physiologically, the basic difference between primary shock (where the symptoms immediately follow the injury) and secondary shock (where the symptoms may not appear for one to four hours after injury) is the appreciable loss of effective circulating

blood volume associated with the latter condition. Such a loss does not occur to the same degree, if at all, in connection with primary shock. The hypotheses advanced to explain secondary shock have been concerned with exhaustion, fat embolism, acidosis, acapnia, toxemia, and loss of fluid locally into the tissues. Experience and investigative work of World War I suggested the hypothesis that toxins present in the blood cause traumatic shock, and there are many who subscribe to this supposition, at least in part. It has been the experience of most surgeons that shock may become manifest immediately after removing a tourniquet and this has led finally to a widespread practice of leaving the tourniquet in place until amputation of the affected limb has been performed proximal to the tourniquet. Time does not permit me to digress on a dissertation of the "Use and Misuse of a Tourniquet." Suffice it to say that experimental shock has been produced repeatedly by traumatizing a limb when the femoral vein was occluded. As a poorly applied tourniquet may cause, or at least contribute to, a state of shock, many observers have mentioned tourniquets only to condemn their use. In these tourniquet experiments it was noted that with the release of the obstruction to the femoral vein, no further decrease in the blood pressure occurred nor was there remarkable evidence of shock when similar trauma was inflicted when both artery and vein were occluded. If one accepts the hypothesis regarding toxin as a cause of shock, blood obtained from the femoral vein of a traumatized limb if injected into another animal, would be expected to cause a fall in blood pressure. Experiments have shown that it does not. In fact, if an animal's blood pressure was lowered because of hemorrhage, it was subsequently raised by injection of blood from the traumatized limb. These observations indicated that the loss of fluid locally was the important factor in the production of shock and that the cause was not the elaboration of some toxic substance. It may be prudent, however, to point out that although much evidence may be advanced against the hypothesis that toxins present in the blood cause shock, yet the practical applications arising from the observations on which the hypothesis was based should not be neglected.

The factor common to all types of traumatic shock has been the reduction in the effective circulating blood volume, resulting in reduced cardiac output, slowing of the peripheral circulation, fall in blood pressure, progressive circulatory failure, and tissue hypoxia. There seems to be a common agreement that hemoconcentration occurs in the shocked state, in spite of differences of opinion as to where and

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how the liquid element of the blood has escaped from the circulating blood volume, and that substances with large molecular size, when introduced into the blood stream, will increase the osmotic tension of the plasma and thus attract fluid from the tissue spaces back into the circulating blood. One thought may be interjected relative to the condition of hemorrhagic shock, which, of course, is rarely seen unaccompanied by trauma of varying degrees. Why, it may be argued, should there be hemoconcentration where hemorrhage alone has occurred? For one would expect dilution of blood and pale, ischemic viscera in contradistinction to that seen in traumatic shock where hemoconcentration, congestion of viscera, engorgement of capillaries, edema of tissues, petechial hemorrhages, and effusion into serous cavities have been the classical pathologic findings. It has been explained, by those who subscribe to the loss-of-fluid theory, that the differences between the pathologic picture of shock and of hemorrhage are dependent on the lapse of time following the injury. Should the hemorrhagic process terminate early, the tissues are said to be pale and ischemic, and the blood will be diluted by the body fluids. When there has been long and continued hemorrhage, however, there has seemed to be a more progressive loss of fluid from the blood due to anoxemia and to increased permeability of the capillaries, so that the blood becomes more concentrated. It should be emphasized again that pure hemorrhagic shock is rarely seen, for in practically all instances of severe hemorrhage, there has been associated trauma of more or less degree. Conversely, however, not all instances of traumatic shock are necessarily associated with hemorrhage; witness the shock associated with severe burns, about which Colonel Raine will speak to you subsequently.

Prior to World War II, in addition to general measures, therapeutic efforts were directed toward restoring an effective volume of circulating blood, but these efforts were limited to the use of blood transfusions, the intra-venous injection of saline or glucose solutions or both, and the intra-venous injection of a solution of acacia. The perfection of the use of human plasma under these circumstances has been considered to be the most significant contribution in the present war and the greatest single factor in the reduction of mortality as compared to World War I. It should be stressed that in those patients where severe hemorrhage has occurred and where a reduction of oxygen-carrying erythrocytes has progressed to such a low point that the tissues are suffering from hypoxia in spite of adequate volume of circulating blood, nothing can possibly be as effective therapeutically as a transfusion of whole blood. On the other hand, in shock states such as those observed with severe burns, where the cellular elements of the blood have not been diminished in quantity, human plasma is the substance of choice.

Emphasis has been placed recently on the use of

human serum albumin as a blood substitute in shock. Objections to this substance have been that it supplies only the protein mainly responsible for the maintenance of osmotic pressure of the plasma and does *not* supply prothrombin, complement, or antibodies. Human serum albumin cannot be considered an entirely satisfactory substitute for blood nor for plasma, although it is a valuable adjunct to our therapeutic armamentarium, particularly where storage or transportation space is at a premium. It is extremely hypertonic and will draw tissue fluids into the blood stream and thus increase the effective circulating blood volume. It should be borne in mind, however, that shipwrecked survivors and wounded or injured persons are usually dehydrated and in negative nitrogen balance. Therefore, it is necessary to use clinical judgment in prescribing this substance. In re-hydration, plasma is indicated and albumin contraindicated unless adequate additional fluids are administered concomitantly. Human albumin may be used with markedly beneficial results in many instances where cerebral edema exists.

A recent conference on gelatin as a blood substitute—National Research Council—has shown that this substance is unsatisfactory because of the instability of the liquid preparations, the slowness of solubility of the dried product, the necessity of warming when dissolving the dried preparation, its non-reproducibility, its heterogeneity with respect to molecular size, its pyrogenicity, and its tendency toward pseudo-agglutination of red cells.

Recent reports by committees of the National Research Council on adrenal cortical extract are to the effect that this substance has no discernible beneficial effect on traumatic or burn shock in man.

WOUNDS

Prior to the surprise attack on Pearl Harbor, now nearly three years ago, reports on the topical application of sulfonamides were rare in sufficiently large series of cases to be of great significance. Following this tragedy, the surprisingly good appearance of wounds in which minor debridement was done, where one of the sulfonamides was applied topically, and where the closed plaster method of wound dressing was utilized quite extensively, led to a rather widespread impression that wound excision was no longer necessary. That this was an unfortunate impression is the feeling of most surgeons who have had the opportunity subsequently of seeing wounds treated in this manner in the forward areas. Considerable confusion has arisen in the use of such terms as "debridement," "wound revision," and "wound excision." Suffice it to say that devitalized tissue will never again become vital, and the only satisfactory method of treating a fresh wound is by the surgical removal of as much devitalized tissue as is reasonably possible. Consequently, if a wounded person is seen within twelve hours, even twenty-four to forty-eight hours,

of the time his injury was inflicted, every effort should be made to thoroughly excise his wounds by removing all devitalized tissue—particularly muscle—and to irrigate the depths of the wound with copious quantities of sterile water or sterile physiologic saline solution. By neglecting to do so, an excellent culture medium is afforded, particularly for gas-producing organisms, and a potentially infected wound thereby may be converted to a manifestly infected wound with all its inherent serious sequelae. The use of closed plaster should be undertaken with caution if at all, and with the full realization that gas gangrene may develop under the cast and its presence may pass undetected until systemic symptoms appear. A false sense of security has been engendered by reports of large series of cases from regions where gas gangrene has been seen only infrequently. It should be understood that this dreaded complication is still a serious problem and that the most effective treatment is to attempt to prevent its development by radical and wide excision of all devitalized tissue, for gas-producing organisms are anaerobic and will not develop in most instances where adequate oxygen is being brought to the tissues in which it has been inoculated.

The topical use of sulfonamides has been the subject of considerable disagreement. One of the most serious deficiencies of the bacteriostatic sulfonamides in topical application has been their failure in the presence of pus. Sulfonamides have been found to be bacteriostatic when, within the organism, they replace para-amino-benzoic acid. The latter is evidently essential in the enzyme system of the bacteria; it has been termed a bacterial vitamin. Without it organisms do not grow and multiply. It has been noted that where protein is being broken down in the presence of pus, blood, plasma, or other tissue protein, so much para-amino-benzoic acid is liberated that few bacteria suffer a deficiency of this substance. A new English chemical called "Propamadine" has been described, for which satisfactory germicidal effects are claimed even in the presence of pus. It will be recalled that the effectiveness of topically applied sulfonamides was thought to be enhanced many-fold if the wound was irrigated first with a chlorine-containing substance such as Dakin's Solution, Hy-chlorite, or Azochloramide.

The successful topical application of dried red blood cells which had been salvaged in the preparation of plasma and which were allowed to age for as long as twenty days, has been reported as a local agent in the treatment of such wounds as open ulcers and old infected burns. A paste of type "O" red blood cells obtained from the same source has been described also and its use observed in the treatment of ulcers and chronically infected and indolent wounds. It has not been advocated as a panacea for chronically infected wounds, indolent ulcers, et cetera, but has seemed to be an effective therapeutic agent in selected cases. Its effect was thought to be due to the supply of necessary nutritional elements or proteins to tissues

which may be deficient in these substances; to the crust which was considered to be a protective covering, a source of nourishment, a scaffolding for the support of connective tissue; and to the effect of the red blood corpuscles, which were purported to stimulate the growth of granulation tissue and to act as a medium for the growth of epithelial cells over the granulating surfaces.

ABDOMINAL SURGERY

The principle of exteriorization of a wound of the large bowel is perhaps the most important advance in this war in the surgery of the abdomen. In World War I, the death rate in injuries of the colon was about 70 per cent; in injuries of the rectum, about 90 per cent. The mortality rate for injuries of the large bowel in this war has been approximately 50 per cent. It has been stressed by competent authority that if the injured part of the large bowel is mobile, it should be extraperitonealized. If the injured part of the large bowel is fixed, the injury should be repaired and a colostomy made proximal to the injury. Any injury of the rectum demands a proximal colostomy. Not infrequently, a small wound of the colon can be extraperitonealized rapidly, and held in place by a small glass rod under the loop of bowel or by a pair of clamps, and thus save valuable time for the patient and for those who may be awaiting urgent attention.

"Fibrin Foam" is a new clinical tool which has emerged from the plasma fractionation program. It has been developed for use with thrombin solutions to fill the need for a topical hemostatic agent which may be left in situ without fear of excessive or injurious tissue reaction. This substance would probably have its greatest field of usefulness in neurologic surgery where dural oozing, bleeding from a lacerated longitudinal sinus, bleeding after removal of a brain tumor, and bleeding after removal of a dislocated intervertebral disc, have been found to be so stubborn in many instances. If adequate trial proves this material to be effective, one can visualize its value in controlling bleeding from the kidney, the liver, the spleen, the lung, and the heart. The suture of wounds by means of plasma-thrombin adhesion has also been described.

In an address before the annual meeting of the American College of Physicians, Brigadier General Hugh Morgan stated that the death rate of all wounded in World War I was 8.1 per cent, while the death rate of all wounded in the present war, up to the date of his statement, was 3.3 per cent. That a reduction of nearly 60 per cent in the mortality rate of all wounded has been achieved in spite of the markedly greater effectiveness of all the instruments of war, is a tribute to the medical professional and to the vast army of laymen who have cooperated whole-heartedly in the program of the care of the sick and the wounded.

In conclusion, may I say it is a record of which we all have just cause to be proud.

Advances in Surgery During the Present War

COLONEL FORRESTER RAINE, M.C., A.U.S.

In our attempts to cover the advances made in surgery during this war, Dr. Gray has talked on the very important subjects of shock, wound debridement, wound revision and abdominal injury. I hope that in my share of the subject, I will be able to cover it in as concise and able a manner.

BURNS

Burns constitute one of the larger problems of warfare. Probably in no other field have there been as great advances in treatment as in this. I shall first list phases of treatment which are rather universally agreed upon and then discuss those elements in which there is still some difference of opinion.

The systemic treatment

Morphine immediately and in adequate doses is essential. It is possible that this point has been stressed so much that occasionally we see individuals who have had overdoses. As in other types of shock, morphine subcutaneously is not immediately absorbed, and when circulation is improved, cumulated dosage may be too great. Repeated half-grain doses are seldom indicated.

Blood plasma. In no other field of therapy is plasma so important as in the treatment of burns. Seldom do these patients need blood, at least in the early stages of treatment, but they are in tremendous need of plasma. This must be given in dosage which a few years ago we would have considered enormous; but it is only by replacing the loss of plasma in the body as rapidly as possible and maintaining blood proteins and blood concentration at a normal level that we can prevent the damage to all cells of the body resulting from gross imbalance in the blood. The amount of plasma needed can be estimated by hematocrit readings, but it must be remembered that these estimates tend to lag behind the actual needs of the individual. Hematocrit determination soon after the burn does not give us an estimate of the amount of plasma that will be needed in the course of the next several hours, but rather is an indication of our immediate dosage, and subsequent determinations are necessary to estimate the amount of replacement therapy which must be carried out. Roughly, mild burns will have their blood balance restored with about 500 cc. of plasma, while moderate burns may require as much as 1,500 cc., and severe burns may need as much as 5 to 6,000 cc. in the course of forty-eight hours.

Fluids: Besides plasma, burned patients require a considerable amount of fluid. In many instances this can be taken by mouth in sufficient quantity, but in severe burns, the intravenous route is necessary, and normal saline and glucose should be administered in sufficient amounts to maintain an adequate urinary output. The great controversy on the subject of chloride replacement in burns, which raged a few years ago, has dropped into a rather secondary role since we found that plasma replacement is the primary need. There is, of course, some loss of salt, but salt should not be administered even in the strength of normal saline in large amounts over several days because it simply adds to the burden already placed on the kidneys. Many patients develop generalized edema because of too much salt.

In speaking on the subject of burns to some of the members of this audience a year ago, I stated that it was my belief that early and adequate plasma replacement would do away with many of the signs and symptoms which occur on the third, fourth and fifth day following burns, which at that time were attributed to toxemia and infection. It is now apparent that many of these symptoms were due to prolonged imbalance in blood constituents, and that the early correction of this imbalance and the maintenance of normal blood relationships has done away with many of these complications.

Local treatment

Cleaning: Good surgical principles indicate a meticulous cleaning of burned areas, but good surgery also takes into consideration the condition of the individual. Minor burns can be cleaned thoroughly without danger to the life of the patient; but large, severe burns can seldom be cleaned thoroughly. It should be a matter of grave concern to a surgeon who has meticulously cleaned a tremendous burned area, spending an hour or so in this endeavor, to have the patient die in two, three or four hours. Certainly some share in the cause of this death should be laid directly at the surgeon's door, because these patients cannot stand such a cleaning process.

There is now, I think, universal agreement that pressure dressings in all parts of the body are the best possible form of local treatment. It is also beginning to be agreed that an entirely bland, greasy base such as vaseline is superior to boric acid or other types of ointments. Such a bland, fine-meshed dressing should be applied first, followed by sterile gauze and then by a bulky, compressible dressing such as cotton waste, and pressure applied by means of an elastic type of bandage. Results by this method of

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local treatment have so far surpassed any of the tanning agents that they should no longer be considered.

We come now to some of the disputed parts in treatment. Should we give sulfonamides or penicillin systemically? It is rather generally agreed that one of the two should be used and it would seem now that the preference is shifting to penicillin, when it is felt that control of infection is likely to play an appreciable part in healing. The use of sulfonamides locally on a burned area is still in dispute. If sulfonamide crystals or powders are used directly on the burned surface in large burns, overdosage is certainly a grave danger, and rather frequently occurs. Sulfonamides in vaseline or in a water-soluble ointment are almost never absorbed to the point of toxicity but at the same time may have very little influence on the control of the infection. Penicillin locally has been used in the later stages of burns when some infection is present but it has not been attended by unqualified success.

CHESTS

Wounds of the chest may be divided into those of the wall and those penetrating into the thoracic cavity. They comprise about 30 per cent of all battle casualties. Accurate figures for most wars have not been available but it appears that this figure is approximately correct through the American Civil War and through the First World War. Because of the serious nature of these wounds, a great many of these patients do not reach medical installations but die on the field, and as a result we find that only approximately 8 per cent of the wounded reaching medical installations have wounds of the chest wall or thoracic cavity. This figure has not altered appreciably during the wars from the American Civil War to the present time, and this in spite of the great increase in effectiveness and wounding potentiality of weapons. The only answer I can see is that efficiency of evacuation, and the speed with which wounded reach medical installations, have increased proportionately. The character of the wounds has also changed materially. They may be divided into bullet wounds and wounds from high explosive. During the American Civil War, 9 out of 10 wounds were from bullets, during the First World War about 3 out of 10, and during the present war about 2 out of 10. As a general rule, bullet wounds produce far less destruction and it is therefore apparent that we are dealing now with a very high percentage of serious wounds from high explosive.

Great progress was made in the treatment of thoracic wounds during the First World War, and I am afraid that in the early stages of this war we failed to follow directions which were pointed out rather clearly by medical officers of the last war who were dealing with chest wounds. Some of the lessons which Colonel Yates summarized were disregarded

and it is only recently that we have again re-discovered their truth. Part of the reason for this disregard was that civil experience did not quite tally with war experience. The great majority of penetrating wounds of the chest seen in civil practice were from smaller caliber bullets, knives, icepicks, etc., which did not produce much tissue damage. It was found that these chests, although they developed a hemothorax, cleared without treatment, and a "hands off" policy therefore developed. Such a policy, applied to war wounds with large-caliber bullets and with high explosive projectiles, does not work. Massive hemothorax with clot formation occurs, which is not readily observed, and in many instances the clot must be evacuated by open thoracotomy when aspiration does not effect its removal. Very briefly we may enumerate the accepted treatment of thoracic wounds at the present time.

1. Bullet wounds without appreciable rib damage, and therefore only minor trauma to underlying lung. Hemothorax here is likely to be only moderate and there is seldom much pneumothorax. These patients do not require appreciable debridement and their hemothorax is readily absorbed without sequelae.

2. Bullet wounds with considerable rib damage and high-explosive wounds from smaller pieces of metal which produce moderate damage to the chest wall and moderate laceration of the lung. These patients, although they may not have an appreciable sucking wound, have injury to both intercostal and lung vessels and develop massive hemothorax. Seldom is there appreciable pneumothorax. Meticulous debridement of the chest wall should be done and deeper structures closed to make it air tight. The skin may be left open if desired. Aspiration of the massive hemothorax should be begun possibly within twenty-four hours, certainly within seventy-two, and all of the blood should be evacuated in the course of several days. Early in the war some surgeons felt that air replacement should be carried out when blood was aspirated, but I think that this concept has been pretty thoroughly discredited. Bleeding from the lung itself is usually minor and will have ceased in twenty-four hours regardless of external pressure. Air replacement tends to collapse the upper lobe and to maintain collapse, which is exactly the opposite of what is desired in the chest.

3. Wounding with extensive damage to chest wall and underlying lung, usually from high-explosive, produces a severe sucking wound of the chest which must be closed temporarily by any means at hand. Definitive treatment with repair of the chest wall should be done as early as possible; it must be meticulous, because massive suturing under tension simply leads to breakdown and infection. If the inner chest wall cannot be closed without tension, the lung itself should be brought up and sutured to the opening. Extensive laceration of the lung should be repaired. In all of these serious wounds it is advisable to use

air-tight drainage, using either a flutter valve or under-water drainage.

4. Massive hemothorax, which does not yield to aspiration, or hemothorax with gas bacillus infection, requires wide-open thoracotomy and manual evacuation of the clot. If this is not done as soon as the patient can stand it, within the first ten days to two weeks, extensive fibrosis occurs, and then decortication is necessary to permit re-expansion of the lung. It is these cases which, if not cared for thoroughly in the early stages, lead to chronic empyema, persistent lung collapse, and extensive residual diminution in vital capacity.

5. Combined thoraco-abdominal injuries are the most difficult to handle. On the left side it may be possible to manage the entire operation from the chest side, taking care of the abdominal injury through the diaphragm. Frequently, however, the abdominal injuries cannot be adequately investigated from this approach and it will be wise to do the chest first and then make an additional abdominal incision. On the right side, when abdominal injury is confined to the liver, it can easily be handled through the chest, and no abdominal incision is necessary. If there is any question in the mind of the operator as to whether there is additional injury to a hollow viscus, it should be investigated through an incision which will give adequate exposure.

The exact role played by sulfonamides and penicillin is not yet determined. Certainly these patients should be given sulfonamides early and they may be used to great advantage locally at the time of definitive treatment. Penicillin thus far seems to have more influence on the mixed infection always present than does any sulfonamide, and rather large doses should be used parenterally following definitive treatment, as a prophylactic, or for the control of infection when it exists. Penicillin locally in the pleural cavity appears to be of considerable benefit and at least until our knowledge of its action is more thoroughly understood, it will be wise to use it. Wide open thoracotomy and evacuation of clot, and the use of penicillin locally and systemically, have been of great aid in controlling gas bacillus infection. Neither sulfonamides nor penicillin obviate the necessity for meticulous surgery, and any attempts to compensate for inadequate, ill-advised, or ill-timed surgery will result in nothing but disappointment.

COMPOUND FRACTURES

Compound fractures represent one of the commonest war injuries and, with the associated soft tissue, vascular and nerve injuries, constitute one of the gravest problems encountered. The fond hopes of some that sulfonamides systemically and locally would prevent infection in these wounds have not been real-

ized. Sulfonamides and penicillin, however, permit surgery which would not have been deemed possible a few years ago. The accepted methods of treatment are about as follows:

Doctor Gray has already discussed wound debridement and wound revision, so I shall not go into those matters in detail. Splinting by first aid man at a first aid station is, of course, essential. Definitive treatment with wound debridement is being accomplished by competent surgeons at a far earlier date than seemed possible a year or so ago. Transportation to more fixed installations in the rear is being done more and more rapidly with immobilization by plaster cast. Here reduction is accomplished and maintained by either skeletal traction or plaster, whichever method best suits the individual case. At this point one of the greatest advances which this war has seen is noted. Secondary closure of wounds, particularly those of compound fractures and those into joints, is being carried out earlier and earlier, with the inevitable result of greatly reduced healing-time. Furthermore, preservation of function is far more complete. These secondary closures are made possible by proper initial debridement and by the added safety against infection acquired from sulfonamides and penicillin. In the most skillful hands it is even found possible to use internal metallic fixation without having osteomyelitis develop. This means of maintenance of reduction, however, should be done only by those most skilled and experienced, for certainly the ill-advised use of metallic fixation in compound fractures if generally practiced will lead to disastrous results. This concept of the care of compound fractures differs rather radically from that practiced in the early stages of this war. Then immobilization by plaster was carried out with infection present, and healing occurred in spite of the infection, sulfonamides being used to minimize its local and systemic effects. The present endeavor is to secure healing by skillful surgery and the use of either sulfonamides or penicillin. Without infection the results are what one might hope for. Healing is occurring without tremendous loss, fibrosis, or both, of the surrounding soft tissues. Joints can be closed secondarily, resulting in relatively normal function. In summarizing the various advances made by surgery in this present war the following points are outstanding:

1. Early adequate first aid with the immediate use of sulfonamides to minimize the development of infection in contaminated wounds.
2. Early thorough wound debridement with virtually no primary suture except in scalp and face.
3. Early, rather complete secondary suture which may be called reparative surgery, to minimize loss of tissues and fibrosis by infection.

Some of the Medical Lessons Learned in World War II

LIEUTENANT COLONEL HERMAN L. MELTZER, M.C., A.U.S.

War has been defined as the most violent relation that may exist between groups of people¹. The paradox which has softened the disastrous effects of the struggle between nations has been the impetus given to scientific advancement by war. Such impetus has been imparted by the need for obtaining advantages over the enemy through the discovery of new things. The development of a drug to supplant quinine for the suppression of malaria is an example of a lesson which has been learned in this war. The ability of American science and industry to furnish an adequate supply of the drug as opposed to the Japanese inability to achieve a similar effect has been of tactical advantage to the American Army.

In almost every war new principles of medicine have been learned. The sanitary codes of biblical times are known to all. The Romans likewise achieved advances in sanitation², including water-borne sewage. During the Renaissance many new methods were developed in the field. These were primarily in surgery and due chiefly to the perspicacity of Ambroise Pare. At the siege of Malaga (Aug. 1487) the use of field hospitals was instituted by direction of Queen Isabella of Spain³ and the use of such installations has continued until the present. Regulations on sanitation promulgated by Maximilian I in 1555 served as models upon which the present medical regulations of the German Army are based⁴.

PREVENTIVE MEDICINE

In all wars the loss of manpower through preventable disease has exceeded the loss due to wounds⁵. In the present war methods of disease prevention are being accumulated and applied so rapidly that it appears that disease will not produce the greater number of casualties. In this paper some of the lessons learned in preventive medicine during World War II are presented.

The problem of disease prevention in troops during war is acute because of overcrowding and the necessity for living in the field where modern sanitary aids are not available. Many of the lessons learned through military necessity will, no doubt, be of value in civilian life after the cessation of hostilities. Thus, the Army has had the opportunity for testing on a large scale the value of periodic physical examinations, a multitude of immunizing procedures, and well distributed facilities for hospitalization. Similar procedures applied to civilian students, industrial plants, or equivalent bodies should prove of value in future years.

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One of the lessons learned in earlier wars but re-emphasized in this one is the necessity for frequent and careful examination of the individual for detection of the early manifestations of disease. Prior to induction into the Army all applicants are given a thorough physical examination including whatever laboratory tests are necessary to exclude disease. After induction a physical inspection is made of all troops once each month and studies conducted on individuals found to have any defect. Each soldier has access to an Army dispensary or equivalent unit, even when in combat. Army hospitals are so organized and maintained that hospitalization is always available to everyone. At times it is necessary for hospitals at the front to operate in tents.

In addition to the many immunizing procedures which are now common knowledge, new vaccines have been and are being developed. Thus, beside the usual immunizations for smallpox and typhoid fever, troops may be immunized for cholera, plague, yellow fever, typhus, influenza and other diseases. The development of a practical means of active immunization for tetanus by use of a toxoid has resulted in that disease being practically unknown in this war.

Research is being conducted on the development of vaccines for bacillary dysentery, the virus diseases, and the rickettsial diseases by the Army Medical Department. A fairly effective vaccine for influenza appears to be available and it is likely that vaccines for the groups of diseases mentioned above may be available soon.

INSECT CONTROL

One of the great lessons in preventive medicine learned in this war has been the need for closer team work between the physician and members of the sciences allied to medicine, that is, the entomologist, the bacteriologist, the sanitary engineer, and the industrial hygienist. The chief enemies with which the medical entomologist has had to contend are the mosquitoes, flies, mites, and ticks. Among the mosquito enemies are the well known *Anopheles* which carries malaria; the *Aedes* mosquito which transmits dengue and yellow fever; and the *Culex* mosquito which is believed capable of transmitting filariasis. The house fly, *Musca domestica*, is known to disseminate bacillary dysentery by mechanically carrying infected stool particles from latrines to food. The mite, louse, and flea transmit typhus and plague.

New mosquito repellents have been developed. The time honored oil of citronella is being replaced by such compounds as indalone, dimethylphthalate, and Rutzger's 612. A teaspoonful of one of these substances is spread on the palms and applied to the

face, neck, hands, ankles, and parts of the body where the clothes fit tightly, such as the buttocks and shoulders. The repellent may be applied to clothing by means of sprayers, such as the hand sprayer or knapsack sprayer. Care must be taken to avoid the eyes and lips. Repellents are effective against mosquitoes for from two to four hours.

Perhaps the most spectacular advance in the battle against the disease producing mosquito, as well as other insects, has been the development of DDT⁶. DDT (dichloro-diphenyl-trichlorethane) is a whitish, light powder which has a tendency to agglomerate. It was discovered in 1874⁷ but was allowed to lie dormant until 1939 when the Geigy Company of Switzerland found that it was an excellent insecticide against moths and bedbugs. Later, as an experiment it was tried against a plague of potato beetles and the results were very successful⁷.

Dengue is a mosquito-borne disease which has produced a good deal of concern to both military and civilian physicians in this region. In addition to the classical symptoms of dengue, dental officers at forward bases have reported verbally that pericoronitis has not been uncommon in patients with dengue at those bases. This has begun as a gingivitis about the molar teeth and has spread to affect more of the gingiva. It has responded to local treatment such as that used for Vincent's stomatitis.

Since a vaccine for dengue is not available, control measures have been directed toward elimination of the *Aedes* mosquito. In Honolulu, this was accomplished by the use of teams of trained inspectors who canvassed each premise and treated or removed every breeding place possible. Special attention was paid to premises in which cases of dengue existed. In such instances adult mosquitoes, both indoors and out, were killed by spraying. In this connection a new means of applying insecticide, the aerosol bomb, has been developed. The bomb looks like a tin can, and by unscrewing a cap similar to that on an automobile tire tube, freon gas is released, and sends an "aerosol" of pyrethrum in sesame oil throughout a room in a few seconds.

SCRUB TYPHUS

The mite-borne diseases have been of military significance in this war, particularly in the south and west Pacific where scrub typhus⁸ has been a cause of concern. This disease has an incubation period of ten to eighteen days, a sudden onset with headache, chilliness, and a step-like rise in temperature to 102 to 105 F. The temperature begins to subside by lysis in about three weeks. There may be bulbar conjunctivitis, apathy and delirium. A small necrotic ulcer or eschar may sometimes be seen at the former site of attachment of the infected mite. This primary lesion is, typically, 2 to 10 mm. in diameter, is surrounded by a pink areola, and is covered centrally with a black crust. The lesion is frequently present on admission

and persists during the active period of illness. A rash appears on the fifth to the eighth day and is characterized by slightly raised, dull or raspberry red papules. The rash fades in a few days. At the end of the first week a tender, enlarged spleen may be detected. Central nervous symptoms are present and consist of confusion, convulsions, and delirium. Myocarditis may be present. Laboratory examination shows a normal leucocyte count or a leukopenia for the first week and a leucocytosis thereafter. The patient's serum contains agglutinins for *Bacillus proteus* O X K (Weil-Felix reaction), a rising titer being diagnostic. This is in contrast to murine typhus, in which the blood contains agglutinins for proteus O X 19. *Rickettsiae* may be recovered from the blood by injection into mice. There is a 2 to 10 per cent mortality from the disease, the mortality rising sharply after the age of forty. There is no specific treatment.

Scrub typhus is probably identical with tsutsugamushi disease, pseudotyphus of Sumatra, tropical typhus of the Federated Malay States, and coastal fever of North Queensland⁹. It is widely spread throughout the Asiatic Pacific Area extending from Japan down along Indo-China through the Federated Malay States into the Bismark archipelago⁹. The risk of infection appears to be greatest in camps located in kunai grass fields bordered by the jungle along water courses. In such areas conditions are favorable to the development and activity of mites. Since vaccines are ineffective against scrub typhus, the following measures for prevention have been used: (1) New camp sites have been completely cleared of vegetation, being preferably burned over prior to occupancy. (2) Sleeping on the ground is avoided. (3) The mosquito repellents mentioned in an earlier paragraph are used as they are effective against mites. The repellent is applied to the clothing as well as to the body. Dimethylphthalate and dibutylphthalate are most effective.

EPIDEMIC TYPHUS FEVER

Typhus vaccine, while not particularly effective against scrub typhus, has proved of value in the European theater as a means of protection for epidemic typhus¹⁰. Dusting with DDT has also been used with success in the control of epidemic typhus. During a large outbreak in Naples following allied occupation of that city the typhus control program consisted of case finding and immediate, large scale delousing¹⁰. Delousing was accomplished by applying DDT in dust or talc to the fully clothed person. The chemical was applied by means of a power duster, more than a million people being deloused in a short period of time by this method. Dusting was effective in the immediate control of the disease, the vaccine being given for long-term control.

BACILLARY DYSENTERY

In addition to mosquito and mite-borne diseases,

the fly-borne diseases have been of military importance. In the past, whole divisions have been immobilized by outbreaks of bacillary dysentery. In general, such outbreaks have been due to the presence of carriers in the Command and poor fly control. In the field, where it is necessary to use pit latrines, flies have come in contact with the infected stools of carriers and have mechanically carried the dysentery bacillus to food, where the organism has multiplied.

For controlling bacillary dysentery the Army has organized small laboratory teams having portable equipment. These teams can be flown to remote outposts on short notice whenever epidemics of bacillary dysentery occur. Stool examinations are performed on all patients and none are discharged until repeated cultures have been negative. In addition, stool cultures are made on the entire command so that carriers may be detected and isolated. To obtain specimens on a large scale, the rectal swab method is used. A rubber tube or speculum is inserted into the rectum and the applicator inserted through the tube. The culture medium is then inoculated with the specimen so obtained. It is possible to examine a great many individuals in a short period of time by this method.

Follow up examinations are made for several weeks to be certain that carriers have been sterilized for *Shigella paradysenteriae*. Sulfaguanidine is effective in the treatment of bacillary dysentery and thus serves as a preventive measure as well¹¹.

RESPIRATORY DISEASES

Certain lessons have been learned during the present conflict concerning the prevention and control of respiratory diseases. Among these are influenza, and meningitis, which is classified as a respiratory disease in the Army. Virus vaccine, types A and B, has been produced for the prophylaxis of influenza. The vaccine consists of a suspension of killed (formalinized) influenza virus, made from the growth of the virus in the allantoic fluid of the fertilized chick egg. The dose is a single 1 cc. injection given subcutaneously. While this vaccine has not yet been distributed on a wide scale, it should be available in the future. Experimental evidence indicates that it is effective in preventing influenza type A or B in about 75 per cent of cases.

The prophylactic use of sulfonamides, in the presence of an outbreak of meningitis, has prevented widespread epidemics. When two to four grams of sulfadiazine are given in a single dose to all members of an organization on a single day, the carrier prevalence remains low unless untreated personnel are introduced to the group.

VENEREAL DISEASE

Venereal disease, which in previous wars has produced a good deal of noneffectiveness, has been fairly well controlled in this war by many means. Perhaps

one of the most important factors in the prevention of venereal disease has been the advent of penicillin and the sulfonamides for the treatment of syphilis and gonorrhea¹². Through the use of these agents, it is possible to render patients noninfectious at an early date, thereby preventing further spread of the disease. The penicillin treatment of syphilis in the Army has a widespread application, being suitable for most stages of the disease.

PSYCHOSOMATIC MEDICINE

A great many lessons have been learned in the field of neuropsychiatry in this conflict. The value of prophylactic psychiatry in raising the threshold of vulnerability to psychologic disorders cannot be overestimated¹³. The psychologic stability of soldiers is directly proportional to their factual knowledge of the situation in which they will serve. For the average individual the ravages of disease and war are exaggerated. Psychologic inoculation is the only effective preventive. Latent and imaginary dangers are naturally shocking on initial recognition and attendant anxiety can be dispelled only when men are given an understanding of the irrationality and emptiness of most of their fears. A patient, simple, repeated presentation of facts will in most instances assuage doubts and debunk groundless anticipation¹³.

Neuropsychiatrists in the South West Pacific Area give the following causes for the psychiatric disorders occurring in that area¹⁴: separation from family, friends, loved objects and familiar surroundings; difficulty of selecting situations to which one can adapt; absence of the feeling of being wanted, appreciated or needed; a feeling that there is an Army ritualism which abhors error or a simple deviation more than it appreciates initiative or originality; a monotony of camp life; repeated bombing with near misses; feeling responsible in some way for a friend's death; being pinned down by the enemy for several hours; seeing others sacrificed on failing missions; and difficulties at home.

INDUSTRIAL HYGIENE

An industrial hygiene program in the Army is carried out under the direction of the Preventive Medicine Service in the Office of The Surgeon General¹⁵. The present war differs from former wars in that it is largely a war of mechanization. This has resulted in the necessity for Army-operated plants being moved to forward areas so that prompt repair of ordnance, automotive equipment, and other equipment may be made near the front. As a result many industrial hazards have developed which have had to be corrected. Occupational hazards are inherent in the manufacture and processing of materials which give off toxic fumes, dusts or gases. Other hazards may be due to environmental factors, such as poor lighting, excessive heat or inadequate ventilation.

Tetrachloroethane is a gas which is widely used in industrial processes in the Army and which in the past has created a hazard. The probable safe limit for eight hours exposure to this solvent is 10 parts per million. By comparison the probable safe limit for eight hours exposure to carbon monoxide is 100 parts per million. Special devices have been manufactured for safeguarding personnel against this gas.

Health hazards are found to exist from the use of industrial solvents such as kerosene and Stoddard's solvent. These may be inhaled or may be absorbed through the skin in sufficient amounts to cause intoxication. They may also defat the skin and cause dermatitis. Preventive measures consist of the use of protective gloves or a protective ointment such as lanolin.

Intoxication due to solvents may be acute or chronic. The symptoms may be related to the nervous system, gastro-intestinal tract, or blood. The chlorinated hydrocarbons, in general, may cause liver damage or aplastic anemia. Petroleum products have a narcotic effect. The prognosis in poisoning due to petroleum products is generally better than that with other products.

Devices to protect men from lead dust in paint spraying shops and from the inhalation of metal dust have included industrial masks and proper exhaust ventilation.

Though time does not permit of their elaboration, many advances in addition to those mentioned above have been made in preventive medicine.

CONCLUSION

In spite of the horrors of this greatest of all world wars, the medical lessons which have been learned offer a vista of hope for the future. The possibility of the introduction of new and bizarre diseases to the United States when our troops return constitutes a challenge to every physician. The romance of medi-

cine, which disappeared somewhat with the passage of the horse and buggy doctor, has returned; for surely there can be no more thrilling call to the young physician than that offered by the opportunity of applying the principles of preventive medicine in the post war world. The need will be great, for problems will exist not only at home but also in those vast and dormant ancient countries which have been awakened from centuries of slumber by the clarion call of global war.

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Clinical Advances in Medical Problems Occasioned by World War II

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The treatment of patients in mass numbers offers the physician an opportunity to observe and improve the results of his treatment. War conditions have given us this opportunity, and the medical profession has greatly benefited by it, as evidenced by the fact that the annual death rate per 1000 for all diseases excluding surgical conditions has been reduced from 15.6 in World War I to 0.6 in World War II.

To enumerate a few of the outstanding diseases we find that:

	PER CENT FATALITY	
	WORLD WAR I	WORLD WAR II
Meningitis	38	4.0
Pneumonia	28	0.7
Tuberculosis	17.3	1.8
Dysentery	1.6	0.05

For an over all picture we may say that there is a reduction in the death rate greater than 95 per cent.

What has made this reduction possible? The answer is manifold, but a few of the reasons are: (1) the placing of the physician so that he can do that type of internal medicine for which he is best trained; (2) the personal interest that the physician shows in each individual case; (3) the advent of new drugs such as penicillin; (4) improved technique in the use of well known drugs; and (5) better control and hospitalization of the patient.

MENINGITIS

Some of the reduction in the mortality of meningitis is due to the use of sulfadiazine and penicillin. Until recently nearly all the cases presenting the Waterhouse-Fridrichsen syndrome were fatal. With the present administration of penicillin intrathecally and intravenously as soon as the patient is admitted to the hospital, the mortality rate and the development of complications has been greatly reduced. The physician attending large concentrations of men should always be meningitis-minded in order to pick up these cases early.

PNEUMONIA

In one of the large naval hospitals a recent survey showed that only two deaths occurred from pneumonia in a twenty-seven-month period. This again demonstrates the improved method of handling

this disease through the use of sulfadiazine and penicillin. Ten years ago a survey was made in a large civilian charity hospital and it was found that each pneumonia case was receiving 72 doses of medicine in each twenty-four hours. With the present simplified form of treatment the patient obtains much needed rest as well as proper medication.

Atypical pneumonia first appeared in 1937 with the reporting of two cases, or .02 per 1000 personnel, and increased so rapidly that the rate was .95 per 1000 in 1941 and 2.79 per 1000 in 1942. Last year proved that it is still on the increase and in the future may have serious consequences, especially since we have as yet no satisfactory method of treatment. It has already surpassed lobar pneumonia and equaled broncho-pneumonia in its incidence, and is far more contagious than either of them. The classification and treatment of atypical pneumonia is still unsatisfactory. It is known that the action of penicillin in fowl and animals in experimental work is not exactly the same as that in humans. However, it has been used with some striking results in some cases of atypical pneumonia, just as sulfonamides have terminated some cases dramatically. One or both should be given at the start of each case. Results will depend on what is the causative agent. There must be various etiological agents, because of the behavior of the disease. Most of the deaths occurring from atypical pneumonia are caused by secondary invaders. On admission to the hospital all pneumonia patients in addition to a complete history and physical examination should have the following laboratory work: (1) urinalysis; (2) erythrocyte sedimentation rate; (3) complete blood count; (4) sputum typing; (5) sputum smear for predominating organisms; (6) sputum culture; (7) x-ray (14 by 17 inches) of the lungs; and (8) if the patient is acutely ill a blood culture should be included. Immediately after this is done all cases of pneumonia should be placed on a regimen consisting of sulfadiazine, 4 gm. immediately and 1 gm. every four hours thereafter by mouth, to be given with sodium bicarbonate; sedation as needed to prevent reaction to sulfonamide and to insure rest; a moderate amount of fluids (2,500 cc. as a minimum per day); a laxative or enema as necessary to insure daily bowel movements; an oxygen tent when necessary, and absolute rest in bed.

In bronchopneumonia and lobar pneumonia the sulfadiazine is continued until a normal temperature has been maintained for two days. At this time it is reduced to 1 gm. three times daily for two days

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and then discontinued. It has been found that in some cases the temperature almost but not quite reaches normal and in such cases, if two of the 1 gm. doses each twenty-four hours are increased to 2 gm., then the temperature usually returns to normal and remains so. This increases the sulfadiazine level to 7 to 10 mg. per hundred cc. of blood. The sulfonamide concentration in the blood of 3 gm. per hundred cc. recommended by many has not been found as effective as the higher levels. Sulfonamide reactions are often due to lack of sufficient fluid intake. When nausea or mental symptoms contraindicate oral medication, 5 gm. of sulfadiazine should be given intravenously followed by 2 gm. intravenously every six hours until oral therapy can be started.

Whenever sulfonamides are indicated but fail to produce the desired results or cannot be given for other reason, penicillin may be used. Penicillin has produced excellent results. The total dosage used is 200,000 to 400,000 units over a period of five to six days. Intramuscular injections of 5,000 to 10,000 units are given every three hours day and night, following an initial intravenous dosage of 20,000 units. The method of administration must be suited to the individual patient. The site of injections often becomes very painful, especially when there is a slight discoloration of the penicillin fluid. Reactions are very rare, the most frequent being a mild rash about fourteen days after the drug is stopped.

The use of blood plasma brings about dramatic changes in the acutely ill. The exact chemistry of plasma is not understood. There are several plausible theories but space does not permit their discussion here. Three units of 250 cc. each, given on two successive days at the proper stage, causes dramatic improvement in all aspects of the disease.

When anemia is present, 500 cc. of whole blood is also administered following the plasma. Its use for acutely ill patients is strongly urged.

A word regarding the use of the two above mentioned drugs is deemed advisable. There is no contraindication to using them together if desired. The indiscriminate use of the sulfonamides is not good medicine. Each case should be carefully selected before using these drugs. Their toxic effects can be fatal. Likewise it is believed that their indiscriminate use lessens their effectiveness in the individual during subsequent illnesses. Penicillin is much less toxic but an intimate knowledge of both drugs is needed to obtain the best results.

TUBERCULOSIS

Tuberculosis, which the general population used to consider a disease to be ashamed of and hidden, has now been brought out where it can be stamped out to the same extent that smallpox has been. All that is needed is to make the public tuberculosis-minded. Educate the public and they will enact isolation laws that

will rid the country of this menace. The armed forces have undertaken a program of x-raying the lungs of every man once a year and also screening out suspected cases prior to entrance into military service. In this way many cases are found, and treatment advised. There is one deplorable fact that should be mentioned. The average stay in the hospital of cases of tuberculosis admitted to the Veteran's Administration is less than sixty days. This does not permit cure of the case. But advancement is being made and the future is much brighter for the control of tuberculosis. The advent of the 35 mm. film of the lungs, costing one cent as compared to 78 cents for the old 14- by 17-inch film, is a great help and is adequate for picking up suspected cases.

MALARIA

This war has directed our attention to malaria. The present trend is to omit all drugs in treatment of malaria except atabrine. Quinine is used only in rare selected cases and for intravenous use. The standard now used is atabrine, 1 gm. during the first twenty-four hours followed by .3 gm. per day for six days, totalling 2.8 gm. At this time the patient is able to return to his activities and should continue on 0.1 gm. per day while in a malaria infected zone.

Vivax malaria will have repeated relapses regardless of the type of treatment. Falciparum or malignant malaria can be cured by the above routine if the patient continues the suppressive treatment for two months after leaving the malaria zone. Much research work is being carried out now on improving the treatment and prevention of relapses in the vivax form but the results are not available at this time.

FILARIASIS

Many of the military forces returning from the tropics have directed our attention to filariasis. This is a self-limited disease if the patient is placed where he is not reinfected. They convalesce best in cool climates. No case of sterility due to it has been reported, to my knowledge. At present there is no basis for fear that the country is going to be flooded by a number of tropical diseases.

PSYCHOSOMATIC PROBLEMS

This war has taught us the vast need for rehabilitation. Our potentially neuropsychiatric patients need attention before conditions produce disability. Likewise our attention is directed to the further effects of strain during wartime by the marked increase of certain heart conditions especially in those over 35 years of age. Still another manifestation is the frequent occurrence of peptic ulcers. We should learn to treat the patient rather than the ulcer, thereby obtaining better results. The old Sippy method of treatment is now obsolete. The use of soft diet, aluminum hydroxide and antispasmodics, with rest and relief from tension and worries, is a far superior method.

EPIDEMIC TYPHUS FEVER

Another new development is the treatment of louse borne typhus fever by the use of para-aminobenzoic acid. Four to 8 gm. are given as the initial dose, followed by 2 gm. every two hours unless the blood level attains excessive values. Adjustments in dosage are made in relation to fluid intake and urinary output. Intake of fluid should be adequate to produce an output of 1500 to 3000 cc. in each twenty-four hours. Best results are obtained with a para-aminobenzoic acid blood level between 10 and 20 mgm. per hundred cc. Sodium bicarbonate is given in sufficient quantity to keep the urine neutral and thereby prevent gastric irritation, nausea and vomit-

ing. Both drugs should be continued until temperature has remained normal for twenty-four hours. Only a small number of cases thus treated have been reported, but it appears that the number of hospital days and the mortality rate have been markedly reduced.

There are many other lessons learned in this war but I would like to mention in closing that if the new research work in penicillin continues to advance, soon we will find that many seropositive individuals do not have syphilis. We will have a new and far better test for the determination of the presence of syphilis and for the treatment of many skin diseases.



Aims and Aspirations of the Territorial Association of Plantation Physicians*

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On June 5, 1942, a group of plantation physicians, official delegates of the Kauai, Oahu, Maui and Hawaii County Plantation Physicians' Associations, met in the Hawaiian Sugar Planters' Association offices in Honolulu and with the blessing of H.S.P.A. Headquarters formed the working organization for a Territorial Association of Plantation Physicians. This meeting organized and adopted a constitution which had been tentatively drawn up over a period of many months by certain of the members. The present meeting, during the next three days, represents the first planned scientific program of this organization.

When new organizations such as this are started, naturally the questions are asked, "Why another organization, and why one such as this, and what are its aims and aspirations?" Plantation employees will ask why, Plantation Managers will ask what is to be attempted or to be gained, H.S.P.A. Headquarters the same, physicians outside the plantations will ask why another medical organization when there are county and territorial medical societies and even some plantation physicians have asked why we need such an organization.

Briefly and simply there is *one* aim of this Territorial Association of Plantation Physicians, namely, *to improve the quality of plantation medicine*; there is *one* aspiration of this organization and it is the same, *to improve the quality of plantation medicine*.

Before elaborating on the aim and the aspiration of this association it might be well to discuss briefly what we are not proposing to do.

1. This is not a pressure group to secure more personal benefits for plantation physicians. Those who have spent the most time and have been most aggressive in forming this organization have the least to gain if there should develop reforms or changes that will eventually but secondarily be of personal benefit to the physician himself.
2. This is not a society formed by malcontents of other societies who cannot run things in those groups.
3. This is not just another society for physicians to belong to if they are inclined to be joiners; we are too busy for that.
4. This not a maneuver on the part of plantation physicians to get another vacation period or a trip to town to buy clothes or Christmas presents or for a pleasure trip to another island with all expenses paid by their employers. In developing

the program for this meeting many of the men consulted said to give them a full program, morning, afternoon and evening, leaving out the play periods because, if they were to leave their practices with the difficulty of catching up on accumulated work when they got back, they wanted a helpful and worthwhile program and meeting.

5. This is not a society intended in any way to compete with, displace or supersede the Territorial Medical Association and its component Societies.

What then is the organization, its purposes, aims and aspirations? At the organizational meeting in June 1942, referred to above, the constitution which was adopted stated our purpose to be as follows:

This Association shall bring into one organization the physicians of the Territory who are employed by the Sugar Plantations, so that all phases of medical activity may be studied, thus advancing the quality of medical service rendered and raising the standards of the medical profession as a whole. The Association shall serve as a consultative body working with the H.S.P.A. on all medical matters. It shall serve as a central clearing point at which all plantation physicians may pool their knowledge, experience and problems relating to all medical matters, both economic and scientific, to their mutual advantage, and should point the way toward standardization, simplification and development of a more scientific approach towards all plantation medical activities.

Broadly this statement of purpose outlines our justification for starting this organization.

For many years the plantation physician has been a lone wolf in the practice of medicine, occasionally conferring with his colleagues, more rarely attending county and territorial medical meetings but in general carrying on alone in his usually isolated district, twenty-four hours per day year in and year out. Slowly changes have been made and in many instances additional physicians have been brought in to help until in some cases well rounded staffs exist either on one plantation or in conjunction with neighboring plantations. In general the plantation physician has kept pace with his colleague outside the plantations. The resulting medical practice has been good and the total end result has been a medical picture that the Territory can point to with pride and which, through the efforts of the medical coordinator, has gained even world wide attention as one of the outstanding experiments in rural medicine in the entire world.

But has the plantation medical practice been good enough? No, it has not; it will never be good

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enough. We must always make it better, and we feel that this organization can be an instrument toward this end. Some of us feel that much more can be accomplished with the same outlay of funds as in the past by simplification, standardization and coordination of our efforts. By this we do not propose that the individual physician should not continue to practice medicine his own way; this is the strongest link in medicine today. The family physician, the general practitioner, is the proudest title a physician can possess. However, nowhere in America, and in few places in the world, is so much expected of the general practitioner. In general he is expected to do everything and do it well. Major surgery, industrial and traumatic surgery, internal medicine, pediatrics, operative and non operative obstetrics, neurology, psychiatry, preventive medicine, dermatology, syphilology and all the other specialties are a part of his day's work. Many of us feel that some system must be worked out whereby this general practitioner may simplify his work, share some of it with his colleagues who lean toward one field of medicine, and help with the colleagues' problems in other fields. If he continues to try to do everything alone he cannot do a thorough job, he will grow old quickly in trying to give his best and he will soon cease to be alert and receptive. The plantation physician should have a good workshop and adequate tools; he should have a receptive attitude and accept change, if for the better; he should have adequate help; he should have easy access to the opinions and assistance of specialists; he should have planned periods of post-graduate study; he should have adequate rest and relaxation from his work so that his family life may be normal and so that he remains always active and alert; he should have access to expert advice on economic matters that are always at hand in the superintending of his hospital and its staff.

That the plantation physician is not assured of such a program is more his own fault than that of others. Usually he has not proposed that such a program be worked out, often, we feel, because he thinks his own position may be jeopardized, financially or otherwise. The result is the confession that a better job could have been done or can be done and that we owe it to our positions to do something about it.

For years, in the sugar industry, practically all department heads have had regular meetings with those from other plantations, discussing their problems, ideas and plans, to the mutual advantage of all. Never has such been true of its physicians, who pride themselves upon sharing every idea. Plantation medicine to a certain extent is industrial medicine, a specialty in itself. Efforts have been made to start a plantation section at meetings of the Territorial Medical

Association but there has never been time and effort enough to make more than a partial success of these ventures. History of progressive medicine shows that as soon as several physicians in a community begin to practice a common specialty they promptly form a special society to study their problems, thus benefiting medicine as a whole. This is a natural and healthy development, and, though rather tardy, is the plan of this organization.

The papers and discussions of this three-day program are illustrative of some of our problems and our aims. Analyzing medical economic problems will point the way toward their solution; hearing and discussing war medical and surgical problems will help the industrial physician because his problems are very similar; getting acquainted with the functions of H.S.P.A. Headquarters is long overdue. What better way to advance industrial medicine than to prevent accidents? The discussion of hospital plans had to come when one observes the so-called plantation hospitals which grew around a dispensary, to which was added a kitchen and then a ward and on and on, so expensive, so inefficient and so ugly, with the same set up duplicated at the next plantation a few miles away; medical reports, medical accounting are so different, so confusing and so hard to coordinate they must be simplified; reports of research and reports of surveys of plantation medical practice are just what we need to advance; and finally, we have the preview of the Medical Director's annual report to the H.S.P.A. the month before it is to be given, in time for the men from the field to help make it a better report. This program justifies our claim that this organization should exist. How could it have waited so long? We hope that our next meeting will be better; we hope that we will have committees working during the coming year on our many common problems; we hope the H.S.P.A. and the plantation management will, through the Medical Director, give us problems for study together; we hope that research will be expanded, and look forward to reports at future meetings of advances resulting from the start made here tonight; we hope in the future to see internationally known industrial specialists at these meetings, discussing specific problems upon which we need help.

We are ready to make forward strides in plantation medicine with an H.S.P.A. Medical Director, an H.S.P.A. Health and Sanitation committee, a going publication in *Plantation Health*, and now, an Association of Plantation Physicians.

I repeat, our one aim and aspiration is to improve the quality of plantation medicine, until we can say that we are offering the best in medical practice to our plantation communities.

Some Practical Facts About Parenteral Dextrose Therapy

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NO CELL CAN FUNCTION WITHOUT ENERGY

DEXTROSE IS AN EXCELLENT SOURCE OF ENERGY

ENERGY IS DERIVED FROM DEXTROSE VIA ENZYME SYSTEMS

CERTAIN B VITAMINS ARE CONSTITUENTS OF THESE SYSTEMS

CARBOHYDRATE BY MOUTH OR VEIN TENDS TO DEplete THE B CONSTITUENTS

THE B CONSTITUENTS ARE EXPENDABLE; THEY MUST BE REPLACED

THE THERAPEUTIC IMPORTANCE OF SUCH REPLACEMENT HAS BEEN EMPHASIZED BY
TOP-NOTCH CLINICIANS, SUCH AS SPIES, SYDENSTRICKER, JOLLIFFE AND POLLACK

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H. M. PATTERSON, M.D.
Hawaii
WILLIAM B. PATTERSON, M.D.
Maui
SAMUEL R. WALLIS, M.D.
Kauai

EDITORIALS

THE RELATIONSHIP BETWEEN THE PRIVATE PHYSICIAN AND THE HEALTH DEPARTMENT*

The work of every subdivision of the Territorial Board of Health directly affects the practicing physicians of this community. It would be more difficult for physicians to practice modern medicine in an effective way without the aid of a well organized and effective health department. On the other hand, all of us who are carrying out the activities of the health program of the Territory of Hawaii recognize that we too would not carry on as satisfactorily, either, without the cooperation, understanding, and whole-hearted support of the medical profession. The dependence of one on the other is mutual, and our successes are contingent upon mutual understanding and confidence. The fundamental purposes of both the physician and the health department are the same. Both are striving for better health in the community.

When a physician is licensed to practice medicine, there are certain obligations and functions which he assumes, such as the reporting of births, deaths and preventable-disease statistics. He is expected by the public to know something about public health and hospitalization facilities, and a great deal about medical care. He becomes primarily involved in and responsible for the medical care of individuals. The health officer, on the other hand, must not only be experienced or trained in all aspects of public health work, but also must keep up with the development of modern methods of medical care and hospitalization. He must also become a student of government. He applies from time to time developments in modern medicine and public health in the promotion of new programs for the benefit of the whole community.

However, there are certain areas in medical care and public health in which private physicians have

not been able to provide complete and adequate individual medical care; for example, tuberculosis, leprosy, venereal disease, crippled children and mental diseases. It is my belief that the health department should do as little clinical and curative work as is possible and compatible with the protection of the general health of the community. It is necessary at times to undertake certain of these services because of immediate necessity. But the health department should, and it will, allocate these activities to the practicing physician as fast as the medical profession will accept full responsibility for them. When there are a sufficient number of qualified practicing physicians who are available and are interested in providing all the preventive and curative services necessary for the protection of community health, then the health department should relinquish such activities to the practicing physician and limit its services primarily to health education activities. Practicing physicians must, however, in order to make this effective, become familiar with the more useful public health methods and techniques that may be utilized in the prevention of disease and the promotion of health. In medical teaching, at least as much emphasis should be placed on aspects of preventive medicine as upon curative medicine.

It is my observation that physicians of this community have been too busy with their private practices to offer much time to, or take much interest in, certain clinic services needed for a comprehensive and modern public health program. This has been particularly true in the past ten years. In the postwar period, when we will have more physicians available, clinic activities of the health department should be staffed by members of the local medical society.

With the present trend in public thinking and legislative action toward public health, hospital and medical care programs, the health department and the organized medical societies of the Territory must work hand in hand in providing the leadership nec-

* This paper was presented by Dr. Richard K. C. Lee, Director of Public Health, at the March 2, 1945 meeting of the Honolulu County Medical Society along with other speakers from the health department.

essary so that these measures will be kept in proper balance with the needs of the community. Health department personnel are constantly asked by the public and by government officials for advice on these subjects. The organized medical profession should also, I believe, through their proper representatives, be available to these same individuals for consultation, and be able to give constructive recommendations. We should, as much as possible, present a united front on these subjects.

This health department is your department. You are represented by physicians on the staff, on the

Board and on your medical advisory committees. We try to aid you individually and collectively. Naturally, we want your cooperation and approval. We do not consider ourselves as your competitors in the field of medical care. I believe we do consider ourselves as your interpreters to the public and government on the whole subject of public health and medical care—having in mind always the interest of the community as well as the aims and objectives of organized medicine. We, of course, value constructive criticism and suggestions from you on any problem relating to public health and medical care. While you are striving for better health and happiness for your patients, we are striving for better public health, and as a result, greater contentment and security for the whole community.

TO THE EDITOR:

I was glad to see your editorial on Weil's Disease in the November-December issue of the HAWAII MEDICAL JOURNAL. The more attention this disease gets the sooner it will be recognized and steps taken to control it. The problem continues the same here. I have seen 16 cases since I published my paper on this disease last year.

There is an impression left by your editorial that Dr. Alicata and I are in disagreement as to the incidence of Weil's Disease in rainy and dry areas. I admit that this interpretation of Dr. Alicata's and my papers could be made but when considered together there is really little, if any disagreement. Dr. Alicata's table on page 16 of *Plantation Health*, v.8, No. 4, Oct. 1944, shows the percentage of positive Weil's agglutination reactions in random workers from various districts of the island and as the incidence of positive reactors curves upward so does the rainfall in inches with the exception of the Hamakua District.

Dr. Alicata is right in concluding that there are more positive reactors in the rainy areas and certainly there is no fundamental disagreement since most of the clinical cases have been reported from the most rainy areas. In my paper in the HAWAII MEDICAL JOURNAL of May-June 1944 in discussing rainfall I made the statement "In general it is wet in all parts of the district most of the time." I think this is the answer. This is a wet district. I broke my figures down into the four principal villages of the district and this breakdown showed that within the district the number of cases did not follow the rainfall curves but again I emphasize all of these villages are relatively wet most of the time. If you look at table 2 in my paper you will see that in the driest village there were 330.14 inches of rain in 27 months. This is wet in any language. I think a generally wet area increases the chance of getting this disease but I feel that within a wet area there are other factors, some as yet unknown, which determine if an individual is to get the disease. It may be that there is an optimum rainfall for the *Leptospira* to flourish in. If this rainfall is greatly increased the *Leptospira* may be washed away from places of contact or it is certainly probable that in extremely wet weather the worker may not turn out for work and make the required contact.

I would appreciate your making some comment upon this or if you like you can use this letter. I do not feel that the impression should be left that Dr. Alicata and I are on opposite sides of the fence on this point.

H. M. PATTERSON, M.D.

Feb. 21, 1945.

LEPROSY AS SEEN AT CARVILLE

Hopkins, of Tulane, and Faget, of Carville, recently reviewed¹ 723 cases of leprosy seen at the National Leprosarium. Some of their observations were of particular interest.

As to the birthplace of their cases, 303 were foreign born; of these nearly half were from Mexico, a sixth from the Philippines, and the remainder widely scattered. Eight in this list were from Hawaii. Of 420 native born patients, 301 were born in Louisiana and Texas, 34 in Florida, and 23 in California; no other state had more than 8. In the list of states from which patients were admitted, the list was led by Louisiana (173), Texas (183), California (132), New York (79), and Florida (49).

Racial ancestry of patients in over half the cases was either Mexican (212) or native-born American (179). Of the latter group, only 52 were Negroes, a surprisingly small number. The prevalence of the disease among the immigrant French-Canadian Acadians and their descendants is discussed at some length.

The disease was of less than two years' duration at the time of admission in 249 cases, and of less than five years' duration in 476. The average interval from onset to admission was approximately five years—an ominous figure from the standpoint of prevention of spread, and one which can undoubtedly be laid in many instances to failure of physicians to suspect, or to know how to diagnose, the disease.

The ratio of male to female patients was more than two to one—definitely higher than in Hawaii, where it is about three to two². It is interesting that among

¹ Hopkins, R., and Faget, G. H.: Recent Trends of Leprosy in the United States, reprinted, with additions, from J.A.M.A. 126:937 (Dec. 9) 1944.

² Sloan, N. R.: Early Diagnosis of Leprosy as Seen in Hawaii, HAWAII MED. J. 3:111 (Jan.-Feb.) 1944.

Negro patients, women outnumbered men, as is also the case in Africa.

In their series there were 537 lepromatous cases, three-fifths of which were listed as mixed (i.e., showing "severe" nerve damage³) and only 186 "neural" cases, of which 31 (all seen during the past six years) were listed separately as tuberculoid cases. This gives a ratio of about three lepromatous cases to one neural case. This ratio prior to 1928 was eight to one! The authors suggest, quite properly, that the reduction of this ratio probably indicates an increase in diagnostic acumen on the part of physicians seeing these cases.

No known contact with the disease was claimed by 560 cases. Contact with a friend or neighbor had occurred in 16 cases, and family contact was admitted in 147. Of these only 16 patients named a husband or wife as a contact, and in 14 of these the disease existed in both persons prior to marriage. In other words, a spouse was known to be a *possible* source in only 2 instances! This same rarity of marital transmission has been noted in Hawaii⁴.

The initial symptoms noted by the patients corresponded precisely with those noted in Hawaii by Norman Sloan², the field being led by macules, nodules, numbness, and swelling of the skin; "ulcers" were far more commonly noted in Hawaii than in the Carville series, perhaps because of the prevalent practice of going barefoot here.

Positive serologic tests for syphilis, so common in leprosy, were noted in slightly over half the cases of lepromatous leprosy, whether there was associated "marked" nerve damage or not, and in only about one-sixth of the cases of neural leprosy, whether of tuberculoid type or not. The sharp disparity between the incidence of positive reactions in the "mixed" and lepromatous cases on the one hand, and the "neural" and tuberculoid cases on the other, seems an additional reason for not making the artificial separation between "mixed" and lepromatous, and between "neural" and tuberculoid.

The same point is made again by the figures on duration of the disease: "mixed" and lepromatous cases lived an average of 10.6 and 9.3 years, respectively, after the onset; neural cases averaged 14.5 years, and one tuberculoid case died 18 years after the onset of the illness.

Still a third piece of evidence comes up in the next section, entitled Disposition of Patients, to support the same point. Of the "mixed" cases, 6 per cent were discharged as arrested; and of the lepromatous cases, 7 per cent. This outcome was achieved, however, in 59 per cent of the "neural" cases and 65 per cent of the tuberculoid cases. What more telling evidence could be desired, than this identity of prog-

TO THE EDITOR:

We have just been advised by the Certified Blood Donors Service of Jamaica, New York, that Dr. Weiner has modified the technic of the Rh typing test. Will you please give this change publicity in the HAWAII MEDICAL JOURNAL. The new technic is:

Mix one drop of the anti-Rh serum with one drop of cells of a 2 per cent fresh red blood cell suspension in a culture tube 3"x $\frac{3}{8}$ ". All suspensions should be made from fresh blood and should be washed clear of any hemolysis. The tube is then placed in the water bath at 37 degrees Centigrade and left for one hour. It is then centrifuged for one minute at 500 r.p.m. and the agglutination observed. The tube is then tapped very gently. The result is then read macroscopically for clumping. Where clumping is evident the result is Rh positive. Those that seem to be negative macroscopically are then examined under the microscope (low power). Those that show no clumping and the red cells evenly distributed are definitely Rh negative.

The serum which the Blood Bank uses is that known as Anti-Rh Standard or Anti-Rh₀. We always run known positive and negative controls with each test.

F. J. PINKERTON, M. D., *Director*.

Honolulu Peacetime
Blood Plasma Bank

March 15, 1945

nosis—poor in lepromatous and "mixed", good in "neural" and tuberculoid? Surely this is the very proof of the pudding itself. As to readmissions because of relapse, the same story is told all over again: one-fifth of the discharged "mixed" and lepromatous cases were so returned, and one-fourteenth of the discharged "neural" cases had such an outcome. No tuberculoid case relapsed.

Most cases died of tuberculosis or nephritis, as is true in other parts of the world. In Hawaii, death from renal failure has regularly been found at autopsy to be associated with amyloid deposition in the glomerular tufts, a very different picture from ordinary glomerulonephritis⁵. It is odd that in this large series of autopsies no mention was made of amyloidosis. One wonders whether it was merely overlooked, or actually did not occur.

From the foregoing material it seems apparent that if we in Hawaii can by virtue of the clinical appearance of patients, coupled with bacteriologic study and properly prepared biopsy material, differentiate between, on the one hand, *lepromatous* leprosy (including "mixed" leprosy) and, on the other hand, "*neural*" leprosy (including tuberculoid leprosy), we will be on a much firmer ground in our constructive program of declaring as "arrested" every possible case, with a minimum of relapses.

³ Faget, G. H.: Personal communication.

⁴ Sloan, N. R.: Personal communication.

⁵ Tilden, I. L.: Personal communication.

BOOK REVIEW

Marihuana Problem: by the Mayor's committee on marihuana. James Cattell Press.

This book might well serve as a model for an investigation of a similar problem by any group in the future. It exemplifies beautifully that such a study, if properly and thoroughly planned in advance and carried out according to plan, becomes infinitely more understandable and useful to persons to whom the problem is potentially interesting, than is a series of haphazard investigations.

Most of us, even physicians, have obtained our ideas about the prevalence and importance of marihuana addiction by reading newspapers and magazine articles on the subject. One becomes absolutely certain, after reading the book, that these articles have not been based on fact but almost entirely on fancy. It is also evident that insofar as the City of New York is concerned, at least—and this group is certainly large enough to be statistically important—the use of marihuana poses a less serious problem than does the use of alcohol. Indeed, addicts studied after years of addiction showed no indication of deterioration of any sort. There is no tendency to increased dosage. Tolerance does not increase. The users themselves are definitely afraid of overdose and carefully abstain from taking more than the usual dose. They even employ antidotes against the effect of a somewhat larger dose than usual.

No matter what phase of the subject of marihuana any physician or psychiatrist may be interested in, he

should be able to find the answer in this excellent little volume.

H. L. ARNOLD, M.D.

PROGRESSIVE MUSCULAR DYSTROPHY:
AN AVITAMINOSIS?

A recent preliminary report by Milhorat and Bartels, of Cornell University Medical College¹, suggests that defective utilization of tocopherol may be the basis for the syndrome of progressive muscular dystrophy. The defect appears to consist in these patients' inability to condense ingested tocopherol with inositol in the gastrointestinal tract, with the resultant formation of a tocopherol-inositol ether.

The complexity of the intrinsic defect is indicated by the fact that no clinical improvement, or decrease in creatinuria, could be produced by feeding either tocopherol or inositol separately. Prompt diminution of creatinuria was produced in five of seven cases, however, by feeding the substances together in equimolecular amounts. The preformed condensation product was from eight to thirty times as effective as corresponding amounts of the separate substances, and this effectiveness was further increased by incubation with extract of hog stomach and duodenum. Similar incubation of tocopherol alone was ineffective except in a single mild case.

¹ Milhorat, A. T., and Bartels, W. E.: The Defect in Utilization of Tocopherol in Progressive Muscular Dystrophy, *Science* 101:93 (Jan. 26) 1945.



COUNTY SOCIETY REPORTS

HONOLULU COUNTY MEDICAL SOCIETY

The regular membership meeting was held on February 2, 1945 in the Mabel Smyth Auditorium. Dr. Halford presided. About fifty members were present.

Three papers were presented: "Mammoplasty for Hypertrophic Breast" by Dr. Clarence E. Fronk, "Demonstration of Cardiac Murmurs" by Dr. Alfred S. Hartwell, and "Relation of Workmen's Compensation to the Employee and Physician" by Mr. William M. Douglas of the Territorial Workmen's Compensation Bureau. A discussion of disability ratings followed.

Dr. Halford announced that Mr. Carter of the Hawaii Medical Service Association was on the mainland studying hospital plans there. Dr. Pinkerton reported that a committee had been appointed, consisting of Drs. Winter, Benyas, and Pinkerton, to study the new industrial fee schedule for adjustment of the H.M.S.A. schedule. He also reported that it had been suggested that the schedule of the Medical Society be used as the "C" bracket and that the other brackets be adjusted up or down; however, no action had been taken. He announced that the H.M.S.A. had built up a reserve of \$86,000.00.

Dr. Halford asked Dr. Winter to discuss the matter of physical examinations. Dr. Winter suggested that the Medical Society request the signatures of any doctors who desire to give physical examinations, in order that the Secretary might recommend these physicians to firms requesting such work.

Dr. Halford reported that Dr. Kepner had presented to the Board of Governors three model laws regarding (1) repeater, (2) juvenile delinquent, and (3) expert testimony. He also asked the members to study the matter of adoption of babies in the Territory.

M. GORDON, M.D.,
Recording Secretary.

KAUAI COUNTY MEDICAL SOCIETY

The regular meeting of the Kauai County Medical Society was held on February 14, 1945, at the Wilcox Hospital at 7:00 P.M. Members present were Doc-

tors Chisholm, Liu, Kuhns, Chang, Harris, Umaki, Hata, and Wallis. Dr. Matsunaga, not yet a member of the Society, was also present.

The minutes of the previous meeting were also read and approved.

Dr. Wallis read a letter from Dr. Fennel, President of the Territorial Association, informing him that he had been appointed to the advisory committee of the Bureau of Maternal and Child Health and that Dr. Y. P. Chang had been appointed as alternate.

Dr. Wallis read a letter from the Hawaiian Canners Co. stating that employees seeking medical services from physicians other than the company physician cannot expect the company to pay for such services unless the company physician has been notified in advance of the arrangements.

It was moved by Dr. Wallis that the Secretary write to Dr. Wilbar and obtain a statement as to which patients are to receive free medical service and which may be charged a fee by physicians visiting Kauai under the authority of the Board of Health. Seconded by Dr. Chang. Passed.

It was moved by Dr. Wallis that the Society have a bulletin board placed in the resident's office of the Wilcox Hospital, the board to be used for the posting of information of interest to the physicians. Seconded by Dr. Hata. Passed.

As per the requirements of the Constitution and By-Laws of the Society the Board of Censors presented the following slate of nominations for officers of the Society for the year 1945-1946:

President.....	Dr. Umaki
Vice President.....	Dr. Hata
Secretary Treasurer.....	Dr. Harris
Delegate.....	Dr. Boyden
Alternate Delegate.....	Dr. Kuhns
Censors.....	Drs. Chang and Chisholm

The Secretary read a letter from Dr. Brennecke stating that he had been asked by Mrs. Plews for a statement from the Society as to the quantity of surgical dressings which should be kept on hand by the Red Cross for emergency use. It was the general opinion that a quantity sufficient to take care of 10 per cent of the population would be enough.

There being no further business, the meeting adjourned.

DAVID LIU, M.D.,
Secretary.

HAWAII COUNTY MEDICAL SOCIETY

The 235th meeting was held at the Hilo Yacht Club Thursday evening, February 1, 1945 at 6:30 P.M. This was a dinner meeting with Dr. Fennel, president of the Territorial Medical Association, as guest. Following the dinner, the meeting was called to order in the lanai of the Yacht Club by the president, Dr. M. H. Chang.

Reading of the previous minutes was dispensed with and Dr. E. A. Fennel was given the chair. He gave a very interesting report on some of the activities of the Territorial Medical Association touching chiefly on conditions as they exist in other Islands: relationship between the Board of Health and medical societies; law to change one year residency; Dr. Kepner's work on the bills regarding juvenile delinquency and expert testimony; premarital tests for syphilis; laboratory technicians; E.M.I.C. program; fee schedule; possibility of having a president-elect of the Territorial Medical Association; and extension of the Hawaii Medical Service plan to other islands.

Dr. Orenstein reported that the physicians connected with the Hilo Memorial Hospital had agreed that the Board of Directors of the Hilo Memorial Hospital should be composed entirely of lay people and that this recommendation had been passed on to the representatives of this Island who are attending the next Legislature. He felt that this information was important for Dr. Fennel to know so that he could inform others in Honolulu regarding this matter. Following this, Dr. Fennel informally discussed laboratory procedures.

As there was urgent business to be attended to, the meeting was called to order for business at 9:30 P.M. Dr. Leslie urged that all 1944 journals be returned to the Library so that they could be bound.

A letter from Dr. Wilbar regarding the resignation of Dr. L. L. Sexton as Government Physician and Registrar of South South Hilo District was read. Dr. L. L. Sexton, who has been Government Physician since 1909, stated that in 1910 the salary was adequate to take care of the work; however, as time has gone on and traveling from different parts of the Island has been made much easier and as the city has grown considerably, the work has increased far beyond the salary. It was recommended and moved by Dr. Orenstein that the Hawaii County Medical Association keep on record, as recommended to Dr. Wilbar, that the Registrar's activities of the District of South South Hilo be turned over to the Board of Health. Dr. Loo seconded this motion and it was passed unanimously.

Considerable discussion followed concerning the position of Government Physician. Dr. C. L. Phillips made a motion for the President to appoint a committee of three Hilo doctors to look into the matter of the position of Government Physician and let Dr.

Wilbar know as soon as possible. This was seconded by Dr. Chang and passed unanimously. As Dr. Sexton was very anxious to be relieved of his duties, Dr. A. T. Roll stated that he would be very glad to take over these duties until such a time as a permanent appointment might be made. It was recommended that any other member of this Society living in Hilo who was interested in this position contact Dr. Wilbar immediately.

Meeting was adjourned at 10:45 P.M.

The 236th meeting of the Hawaii County Medical Society was the annual meeting which was held at the Country Club on March 3, 1945, at 6:30 P.M. Dr. M. H. Chang, president, was the host at the dinner.

The meeting was called to order at 8:10 P.M. It was moved by Dr. Orenstein that the minutes of the previous meeting be dispensed with.

Dr. Leslie gave the treasurer's report which was accepted. Dr. Phillips reported on his work as chairman of the committee to work into the matter of Government Physician for South South Hilo. The plan at present is to wait and see what happens in this year's Legislature. Dr. Wilbar is trying to arrange it so that each physician will be able to take care of indigents and present his bill to the County. Dr. Leo Bernstein has been appointed in charge of Vital Statistics. Dr. Wilbar requested Dr. Sexton to carry on with the position as Government Physician a little longer until the Legislature reaches a decision.

Dr. Wm. Leslie reported on the tuberculosis committee. Dr. Phillips suggested that we let our legislative committee study this report in more detail.

Dr. Patterson offered the suggestion that the President and the legislative committee, together with other officers of the Society, meet before each meeting to present facts and discuss them so as to get our business meeting over quickly and have more time for scientific studies. Dr. Leslie reported on the work of the library committee for the year. Dr. Phillips moved that this report be accepted. Dr. M. H. Chang wondered if accepting this report meant that we had to conform with all recommendations. It was decided that accepting the report meant only further studying of the recommendations by the new committee. Dr. Crawford offered his opinion that the Hilo Memorial Hospital should do more for the library. Dr. Leslie stated that Mr. Hanner of the Hilo Memorial Hospital was in agreement with this suggestion but that it was up to the Legislature to decide. Motion was seconded by Dr. Chang and unanimously passed.

Dr. Eklund gave a report on his communication with the Inter Island Airways regarding the transportation of sick people to and from Honolulu.

Dr. Leslie reported for the fee schedule committee and presented a tabulation showing the different changes among different doctors on this Island giving at the same time, the low, high and average charges for certain operations and sicknesses. Election of officers took place following this. The following officers were elected unanimously.:

President.....Dr. R. T. Eklund
 Vice President.....Dr. Wm. F. Leslie
 Secretary.....Dr. S. Mizuire
 Treasurer.....Dr. H. B. Yuen
 Board of Censors.....Dr. G. Tomoguchi (added to list)
 Delegates.....Dr. Archie Orenstein and Dr. H. M. Patterson
 Alternate Delegates:

Dr. H. E. Crawford and Dr. G. Tomoguchi

Letter was read from the Junior Chamber of Commerce requesting the endorsement of this Society for Cancer Month, which will be held for the purpose of raising funds to help continue the study on research work in cancer. It was unanimously passed that this Society go on record as approving Cancer Month.

Meeting was adjourned and Dr. Yuen, chairman of the entertainment committee, started off the evening with several games. Prizes donated by local merchants were offered.

R. T. EKLUND, M.D.,
Secretary

MAUI COUNTY MEDICAL SOCIETY

The Annual Meeting of the Maui County Medical Society was held at the Jodo Mission in Wailuku on January 30, 1945.

The following members were present: T. P. and E. L. Chou, Osmers, Kushi, Tompkins, Sanders, Bal-

four, Kanda, K. Izumi, Patterson and von Asch. Guests were Drs. Cloward, Stitt and Florine.

Dr. John Sanders gave a report of the Annual Dinner Party. The committee has arranged for the party to be held on February 17, at the Country Club. It was decided that the dinner should be a closed affair, i.e. medical personnel only (this, however, included the dentists, veterinary surgeons and Service personnel who may be invited by members. A blanket invitation is being made to all Service M.D.'s.)

Dr. Patterson, chairman of the library committee, reported that about three to four hundred additional journals have been added to the library.

Dr. Balfour brought up the subject of expert testimony. Dr. Cloward pointed out that when a doctor is summoned to court he need only testify as to facts and that as soon as he is asked for an opinion on a hypothetical case, he can refuse to answer unless the court wishes to appoint him as an expert witness, in which case he would be entitled to expert witness' fees.

Dr. Tompkins discussed the current movement toward placing all tuberculosis sanatoria under Territorial control by the Board of Health. This matter will be brought up again in the future.

Dr. von Asch gave a report for the treasurer which was accepted.

Dr. K. Izumi reported for the nominating committee as follows:

Dr. George von Asch, President
 Dr. Wm. D. Balfour, Vice-president.
 Dr. John Sanders, Secy.-Treasurer.

These men were elected unanimously to serve for the next year.

Dr. Cloward addressed the society on head injuries.

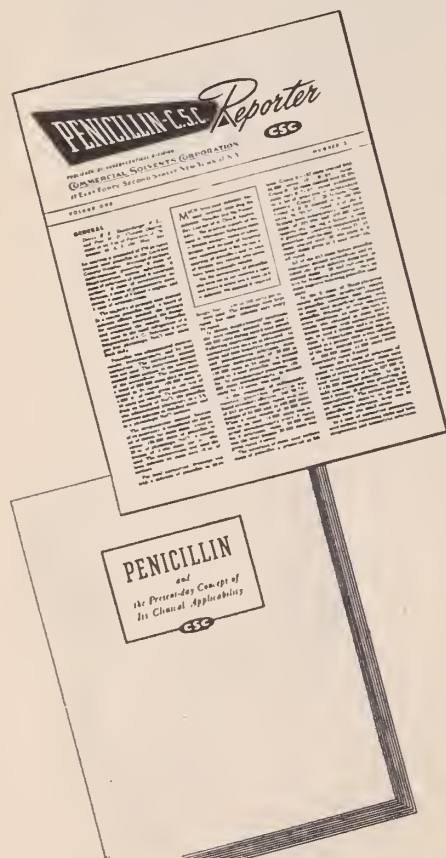
Dr. Florine addressed the society on spinal cord tumors.

GEORGE VON ASCH, M.D.,
Secretary



In the Management of Subacute Bacterial Endocarditis

Physicians are invited to send for this comprehensive brochure. • The Penicillin-C.S.C. Reporter, presenting abstracts of the world literature, is periodically mailed to all physicians. Notify us, if it has not been received.



BARELY a year ago the reports regarding the use of penicillin in subacute bacterial endocarditis were hardly optimistic. Outstanding clinicians doubted if more than temporary sterilization of the blood stream could be expected. When the wider availability of penicillin permitted more intensive and prolonged therapy, endocarditis in many instances yielded. As recent publications show,* this serious infection, heretofore practically hopeless, no longer need be considered so.

Since very large amounts of penicillin over long periods are required in the treatment of bacterial endocarditis, the purity of the drug administered (number of Oxford Units per milligram of substance) appears of importance. The high degree of purity accomplished in Penicillin-C.S.C. merits the physician's preference for Penicillin-C.S.C. in the management of bacterial endocarditis as well as in other indications.

*Collins, B. C.: Subacute Bacterial Endocarditis Treated with Penicillin, J.A.M.A. 126:233 (Sept. 23) 1944.

MacNeal, W. J.; Blevins, A., and Poindexter, C. A.: Clinical Arrest of Endocarditis Lenta by Penicillin, Am. Heart J. 28:669 (Nov.) 1944.

Zimmerman, S. L., and Barnett, R. N.: Case of Probable Meningococcus Endocarditis Apparently Cured with Penicillin, South. M. J. 37:694 (Dec.) 1944.

Herrell, W. E., and Kennedy, R. L. J.: Penicillin: Its Use in Pediatrics, J. Pediat. 25:505 (Dec.) 1944.

Dawson, M. H., and Hunter, T. H.: The Treatment of Subacute Bacterial Endocarditis with Peni-

cillin, J.A.M.A. 127:129 (Jan. 20) 1945.

Nahum, L. H., and Doff, S. D.: Recent Advances in the Treatment of Heart Disease, Connecticut M. J. 9:3 (Jan.) 1945.

Poindexter, C. A.: The Use of Penicillin in the Treatment of Subacute Bacterial Endocarditis, reproduced by permission of the American Heart Association in J. Arkansas M. Soc. 41:165 (Jan.) 1945.

White, P. D.; Mathews, M. W., and Evans, E.: Notes on the Treatment of Subacute Bacterial Endocarditis Encountered in 88 Cases at the Massachusetts General Hospital During the Six Year Period 1939 to 1944 (Inclusive), Ann. Int. Med. 22:61 (Jan.) 1945.



PHARMACEUTICAL DIVISION

COMMERCIAL SOLVENTS

17 East 42nd Street

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New York 17, N. Y.

PENICILLIN - C.S.C.

LIBRARY NOTES

THE HONOLULU COUNTY MEDICAL LIBRARY

MRS. ETHEL HILL, Librarian

MISS DORIS T. YASUTAKE, Library Assistant

8:00 A.M.-4:30 P.M. Phone 65370 7:30 P.M.-9:30 P.M.

RECENT ACQUISITIONS

By purchase:

- Adams, R. C.: *Intravenous anesthesia*. c1944.
 Alvarez, W. C.: *Nervousness, indigestion and pain*. c1943.
 Babkin, B. P.: *Secretory mechanism of the digestive glands*. c1944.
 Bierman, William: *Physical medicine in general practice*. c1944.
 Christopher, Frederick: *Minor surgery*. 5th ed. c1944.
 Christopher, Frederick: *Textbook of surgery*. 3rd ed. c1942.
 Conant, N. F.: *Manual of clinical mycology*. c1944.
 Craig, C. F.: *Etiology, diagnosis and treatment of amebiasis*. c1944.
 de Lorimer, A. A.: *The arthropathies*. c1943.
 Dunbar, Flanders: *Psychosomatic diagnosis*. c1943.
 Duncan, G. G.: *Diseases of metabolism*. c1942.
 Ewing, James: *Neoplastic diseases*. 4th ed. c1940.
 Huhner, Max: *Diagnosis and treatment of sexual disorders*. c1943.
 Kennedy, J. W.: *Vaginal hysterectomy*. c1944.
 Kessler, H. H.: *Accidental injuries*. c1941.
 Levine, S. A.: *Clinical heart disease*. 3rd ed. c1945.
 Lichtman, S. S.: *Diseases of the liver, gallbladder and bile ducts*. c1942.
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International Clinics
Journal of Cutaneous Diseases
Mededeelingen van den dienst der volksgezondheid in Nederlandsch-Indie
Memorias do Instituto Oswaldo Cruz
Transactions of the Royal Society of Tropical Medicine and Hygiene
 Reprints and pamphlets on leprosy and allied diseases

From DR. ALBERT M. OKUMURA

- Back files of:
American Journal of Ophthalmology
Annals of Otology, Rhinology and Laryngology
Archives of Ophthalmology
Archives of Otolaryngology
Bulletin of Practical Ophthalmology
Digest of Ophthalmology and Otolaryngology
Eye, Ear Nose and Throat Monthly
Laryngoscope

From DR. I. L. TILDEN

- American Journal of Clinical Pathology* (subscription and back files)

From DR. H. S. DICKSON

- British Medical Journal* (missing and duplicate copies)

From MISS DOROTHEA L. TAYLOR

- Abt, J. A.: *Baby doctor*. c1944.
 Sigerist, H. E.: *Civilization and disease*. c1943.

From the LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Buxton, P. A.: *Researches in Polynesia and Melanesia*
2v. c1928.

Reprints and pamphlets on leprosy and tropical medicine

From the U.S. PUBLIC HEALTH SERVICE

Back files of:

American Journal of Tropical Medicine

Arquivos de Hygiene

Boletin de la Oficina Sanitaria Panamericana

International Journal of Leprosy

Journal of Infectious Diseases

Leprosy in India

From DR. NILS P. LARSEN

Back files of:

Braithwaite's *Retrospect of Practical Medicine & Surgery*

Medical Journal of Australia

Oriental Journal of Diseases of Infants

Puerto Rico Review of Public Health and Tropical Medicine

Scientific Reports of the Government Institute for Infectious Diseases (Tokyo)

Reprints and pamphlets on various subjects

From DR. ROGERS LEE HILL

Back files of:

American Journal of Cancer

American Journal of Surgery

Archives of Surgery

Journal of Thoracic Surgery

Surgery

From DR. S. S. KATSUKI

Archives of Internal Medicine (back files)

Mrs. Charles B. Cooper has presented the Library with *An Atlas of Venereal and Skin Diseases* by James C. Johnston. This book was given in memory of her husband, Dr. Charles B. Cooper. An "in memoriam" book plate will be inserted, and the volume placed on display in the library.

We have been notified by Dr. Carl Stroven of the University of Hawaii Library, that the University has approved the purchase of a complete back file of the *Journal of Clinical Investigation*. The Honolulu County Medical Library has subscribed to this journal, and issues from January 1944 to date are now available for use.

Dr. Stroven also cordially invites all members of the Medical Society to use their files of medical journals, or any other material in the University Library. The circulation rules are simple: any physician may draw out the volumes he needs for two weeks, subject to renewal by phone for another two weeks.

JOURNALS CURRENTLY RECEIVED

The following journals are being *currently* received in the Library. Please add them to the list previously published in the November-December 1944 issue.

American Journal of Clinical Pathology (gift of DR. I. L. TILDEN)

American Journal of Digestive Diseases (gift of DR. KYURO OKAZAKI)

American Review of Soviet Medicine

Archives of Ophthalmology (gift of THE CLINIC)

Archives of Otolaryngology (gift of THE CLINIC)

Archives of Pathology (gift of THE CLINIC)

British Journal of Surgery

Bulletin of Hygiene

Bulletin of the Oficina Sanitaria Pan Americana (gift of U. S. PUBLIC HEALTH SERVICE)

Endocrinology

International Journal of Leprosy (gift of DR. H. L. ARNOLD, JR.)

Journal of Clinical Investigation

Journal of the Iowa State Medical Society

Journal of Pediatrics (gift of NURSES' ASSOCIATION)

Modern Medicine

Southern Medical Journal

Tropical Diseases Bulletin

West Virginia Medical Journal



NOTES AND NEWS

REAR ADMIRAL C. B. CAMERER

The promotion of Captain C. B. Camerer, M.C., U.S.N., District Medical Officer of the Fourteenth Naval District, to the rank of Rear Admiral, has recently been announced.

Admiral Camerer is a graduate of St. Louis University Medical School in the class of 1908, and is also a graduate of the Naval Medical School. He is in his thirty-sixth year of naval service. His specialty is eye, ear, nose and throat.

RAYMOND G. NEBELUNG

Dr. Raymond G. Nebelung, Doctor of Public Health, formerly a member of the faculty of the School of Hygiene and Public Health at the University of Michigan, where he received his training, and subsequently at Oregon State University, was recently appointed Executive Director of the Public Health Committee of the Chamber of Commerce of Honolulu.

Dr. Nebelung served as District Public Health Officer of the Thirteenth Naval District from March 1942 until February 1943, when he was transferred to a similar position in the Fourteenth Naval District. He has held the rank of Lieutenant Commander, U.S.N.R., since April 1944. In December 1944 he was placed on inactive duty by Admiral Chester W. Nimitz in order to permit him to assume his present duties.

The program of the Public Health Committee, under Dr. Nebelung's direction, will be one of cooperation with organized medicine and official and voluntary health agencies in the interests of over-all, long-range planning and development of coordinated programs in community health work.

PATHOLOGISTS' MEETING

The Hawaii Society of Clinical Pathologists held a seminar meeting on the evening of February 23, 1945, at Tripler General Hospital, Farrington Division. Nine cases, 3 from North Sector General Hospital, 2 from Tripler General Hospital, 2 from The Queen's Hospital, and 2 from St. Francis Hospital, were discussed. Slides on these cases, previous-

ly mailed to the men attending, were projected upon a screen. A set of sections was also mailed to pathologists on Guam and Leyte previously stationed in Hawaii. The following persons were present: Lt. Col. Tell Nelson, M.C., A.U.S., Lt. Col. C. S. Moran, M.C., A.U.S., Major David L. Adler, M.C., A.U.S., Capt. L. E. Field, M.C., A.U.S., Capt. William Levi-son, M.C., A.U.S., Lt. Col. Elson B. Helwig, M.C., A.U.S., Lt. Col. Geo. T. Rich, M.C., A.U.S., Capt. Ralph G. Brown, M.C., A.U.S., Capt. Henry S. Ber- net, M.C., A.U.S., Lt. Col. Carl F. Tessmer, M.C., A.U.S., Major Henry E. Davidson, M.C., A.U.S., Col. J. E. Fish, M.C., A.U.S., Capt. Fred Dick, Jr., M.C., A.U.S., Cmdr. E. J. Losli, M.C., U.S.N.R., Dr. E. A. Fennel, Dr. Sumner Price, Dr. Thomas Chang, Dr. I. L. Tilden, and Dr. M. Barnes.

DERMATOLOGISTS' MEETING

The sixth quarterly meeting of the Hawaii Dermatological Society was held on Saturday, March 10, 1945, at 881 South Hotel Street. Twelve cases were presented and discussed; a transcription of the discussions will eventually be published in the Archives of Dermatology and Syphilology.

Those present at the meeting were: Dr. Harold M. Johnson, Lt. Col. Carl Tessmer, M.C., A.U.S., Major Tibor Benedek, M.C., A.U.S., (by invitation), Major Gerard De Oreo, M.C., A.U.S., Capt. Herbert Lawrence, M.C., A.U.S., Capt. Irving Holtzman, M.C., A.U.S., (by invitation), Capt. Fred Licks, M.C., A.U.S., (by invitation), and Dr. Harry L. Arnold, Jr. The three Navy dermatologists known to be stationed in Hawaii were unable to be present.

The office of President of the organization, vacated by the recent death of the incumbent, Dr. James T. Wayson, was not filled.

The high spot of the meeting was the presentation by Major Benedek and Major De Oreo of an example of an extremely rarely diagnosed disorder, known as hyperkeratosis follicularis et parafollicularis in cutem penetrans (Kyrle).

The next meeting of the Society will be held on Saturday, June 9, 1945, at 1:00 P.M., at the same location. Notification by post card two weeks in advance of the meeting will be made on request to either Dr. Johnson or Dr. Arnold.

DR. ARTHUR A. ST. MAUR MOURITZ

Dr. Arthur A. St. Maur Mouritz, M.D., M.R.C.S., M.R.C.P., D.Lit., kamaaina dean of Honolulu physicians and contemporary of Father Damien, the "Martyr of Molokai," died on December 1, 1944, at St. Francis Hospital, after having been in poor health for a long time.

Dr. Mouritz was born in London, England, and was 88 years old when he died.

He studied at Cambridge and at the Paris Academy, where he worked under the great Charcot. He began his medical career at the age of 16 at Oxford University. Completing his education, he was given the rank of second lieutenant in the British navy and sent to Africa to assist in the stamping out of malaria there.

After completing his work in Africa, Dr. Mouritz was, for two years, ship's physician on sailing clippers and steamers of the Dutch India Company on the South American run.

He came to Hawaii in 1883 as ship's physician on the steamer Abergeldie on which a large number of Portuguese agriculturists came to Hawaii, and decided to remain here.

Shortly after his arrival King Kalakaua requested him to take a stricken English plague ship, which had arrived from Hong Kong, China, to sea to free it of smallpox. The vessel was at sea ten days and on its return was pronounced by the Hawaiian health authorities as again free of disease.

After four years at Kalaupapa, where he was a co-worker with Father Damien, Dr. Mouritz spent a dozen years in leeward Molokai, con-

tinuing as consulting expert to Kalaupapa Settlement. He served as an expert inspector of the Goto leprosy treatment in 1893, 1894, and 1895, and it was his opinion that the treatment which at the time had given hopes of great beneficial results, was more harmful than helpful. Eventually the treatment was discontinued. Dr. Mouritz spent 19 of his 50 years in Hawaii on Molokai.

In 1916 he published a *History of Leprosy in the Hawaiian Islands*, now out of print. Another interesting work was a story of Hawaii's revolutions which resulted in the overthrow of the monarchy, the dethronement of Queen Liliuokalani, establishment of the provisional government, creation of the Republic of Hawaii, annexation to the United States and the establishment of the present Territory of Hawaii 45 years ago. Among his other writings were: *Historical Castles*, London, 1882; *The Tragedy of the Careless*, Cincinnati, 1906; *The Path of the Destroyer*, Honolulu, 1916; *Brief World's History of Influenza*, Honolulu, 1920; *The Conquest of Smallpox*, Honolulu, 1924; and *Our Western Outpost*, Honolulu, 1935.

Dr. Mouritz was the principal witness before the ecclesiastic court held here in 1938 on the life work of the "Martyr of Molokai."

Dr. Mouritz was a widower, and is survived by a son, Desmond, and a daughter, Nora.

In recent years he busied himself with his patients, living very modestly.

He was conspicuous by his straight carriage and brilliant mind, which continued almost to the end.

L. A. R. GASPAR, JR., M.D.

DR. L. R. GASPAR

Dr. L. R. Gaspar expired on November 24, 1944, in Oakland, California, following a prolonged illness.

Born in Funchal, Madeira Islands, Portugal, on April 16, 1874, he received his education in Funchal Medical School and the University of Coimbra in continental Portugal, and then attended the University of Brussels.

He married Maria Isabel Rodrigues on July 17, 1902.

In 1909, following a severe epidemic of smallpox in Funchal, Madeira Islands, in which he lost a daughter, age 3, he came to Hawaii

as surgeon of an immigrant liner. He liked the place so well that he returned in 1910 with his wife and son.

He practiced continuously here from 1910 to 1941, when he suddenly became ill.

Dr. Gaspar was vitally interested in the Portuguese community, and gave up his specialty in nose and throat to carry on general practice in the Portuguese colony.

Dr. Gaspar was also Consul of Cuba in Honolulu for many years.

He is survived by his wife and son, Dr. L. A. R. Gaspar, and three grandchildren.

L. A. R. GASPAR, JR., M.D.

PROCUREMENT AND ASSIGNMENT

It has recently been announced by Dr. F. J. Pinkerton, chairman of Procurement and Assignment for the Territory of Hawaii, that 15 physicians from the Territory have entered the Army or Navy medical corps since February 1944 and approximately 15 more of our local doctors will enter the services during the next few weeks.

Of those who have already been commissioned upon statement of availability from Procurement and Assignment, Dr. Louis Hirsch of Hilo, Hawaii is now serving in the Army.

The remaining 14 doctors commissioned were all from Honolulu County. Those serving in the Army are Dr. Anthony John Brunse, Dr. Raymond Dusendschon, Dr. Norman Reichert East, Dr. Robert Paul Gallagher, Dr. Philip W. Hursh, Dr. William S. Ito, Dr. Edward K. S. Lau, Dr. James Wong and Dr. Richard W. You.

Serving in the Navy medical corps are Dr. Robert F. Bailey, Dr. Colin C. McCorriston, Dr. James Alvin Mitchell, Dr. William M. Walsh and Dr. Frederick B. Warshauer.

Recent additions to the staff of internes at The Queen's Hospital were Dr. Nyla Ruth Elmes and Dr.

Grace Hall Hedgcock, both of Women's Medical College of Pennsylvania, who came to work here April 10, 1945. The last previous addition to the staff was Dr. Harry D. Ellis, of Indiana University School of Medicine, who started his service January 15, 1945.

Dr. Harold M. Johnson has recently been vacationing on the Island of Hawaii. He addressed the Hawaii County Medical Society on the subject of the Diagnosis and Management of Some Common Dermatoses.

Dr. and Mrs. Guy C. Milnor are traveling on the mainland and expect to return to Honolulu about September 1. At that time they will bring their son John with them to serve his internship at the Queen's Hospital. He will graduate on June 20 from Temple University. Dr. and Mrs. Milnor plan to visit San Francisco, New York, Philadelphia, Harrisburg, Pa., the Mayo Clinic and Seattle.

Dr. and Mrs. H. L. Arnold, Sr., are on vacation on the mainland. They have been visiting in Ann Arbor and Detroit and are now staying with Dr. Arnold's father and brother, Drs. A. L. Arnold, Sr., and Jr., in Owosso, Michigan.

Dr. and Mrs. Robert Wong of Honolulu welcomed the arrival of their first child on May 11. The baby is named Stephen Willis Wong and weighed 7 pounds 9 ounces at birth.



DEFINITELY A SUCCESS

It was the consensus of opinion that the recent convention of the Hawaii Medical Association was productive of definite and substantial results.

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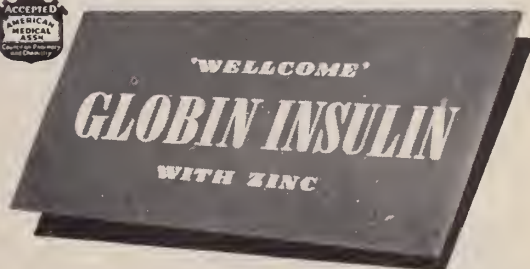
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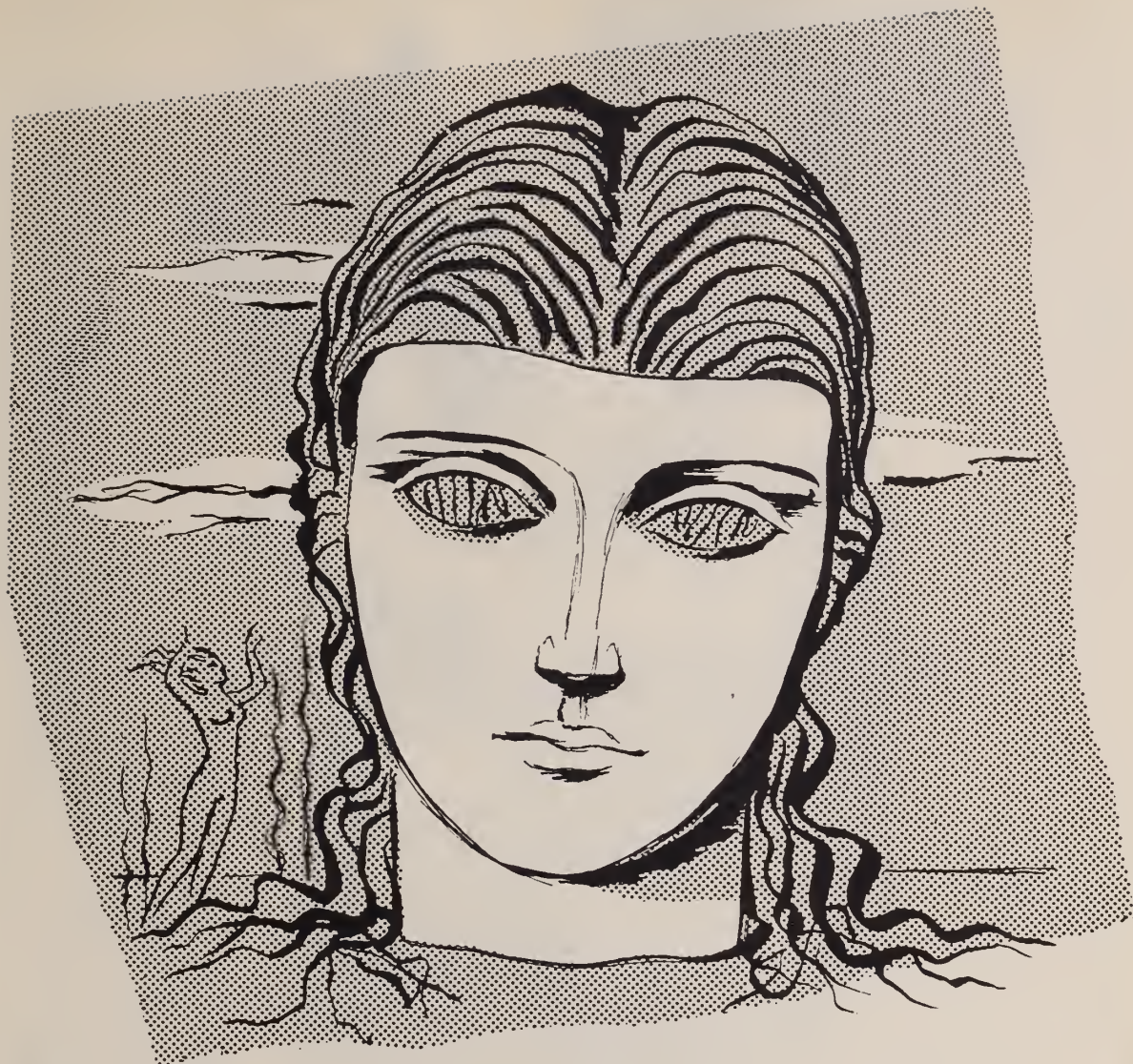
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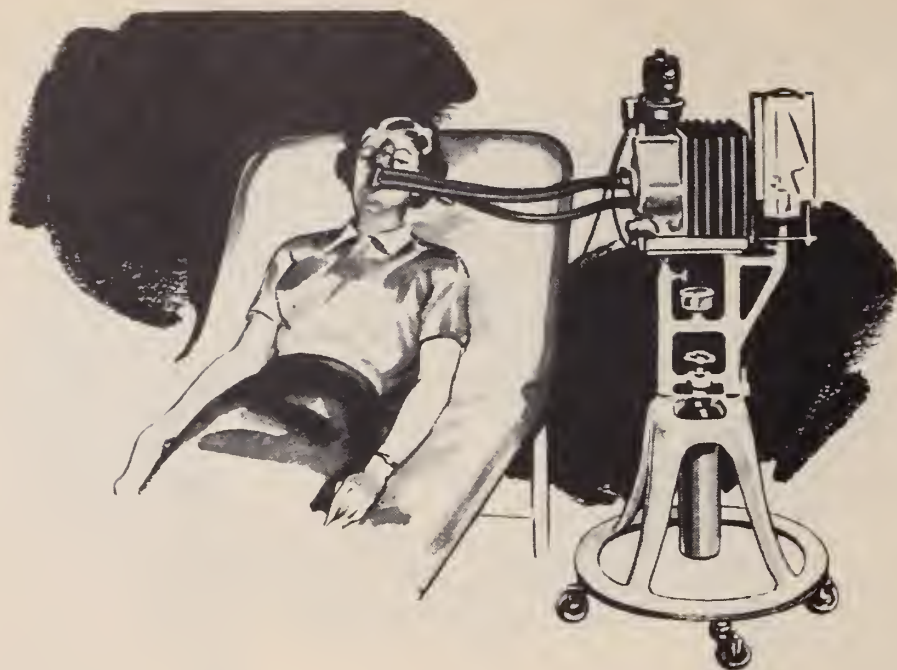
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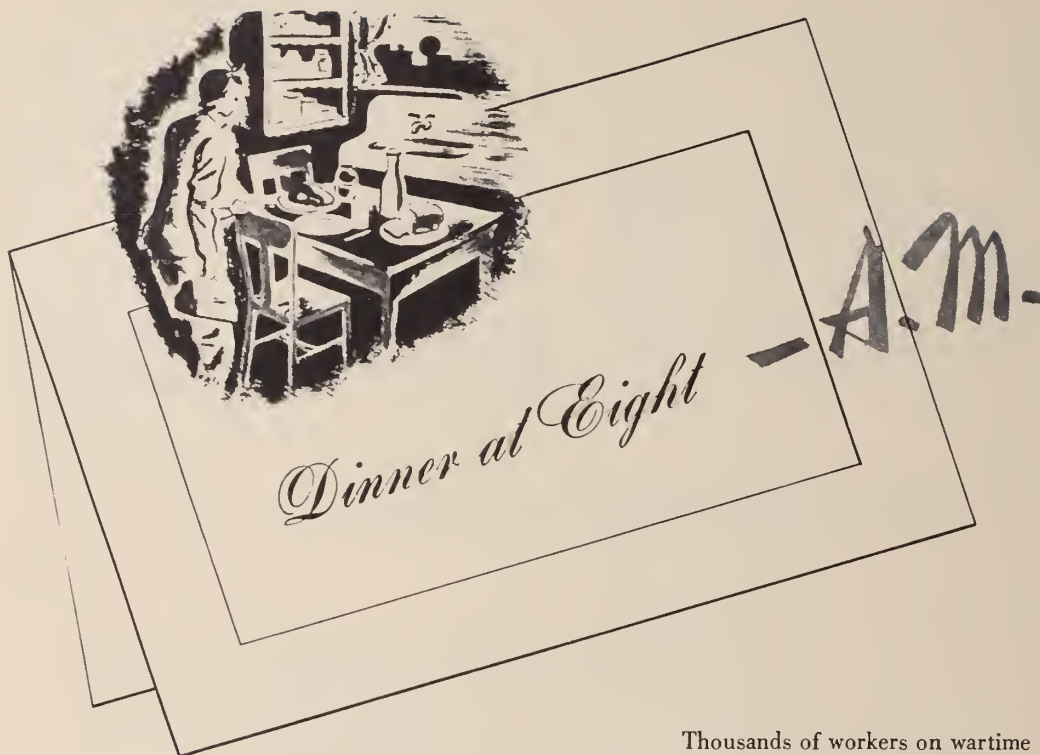
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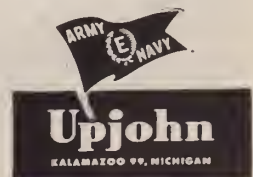
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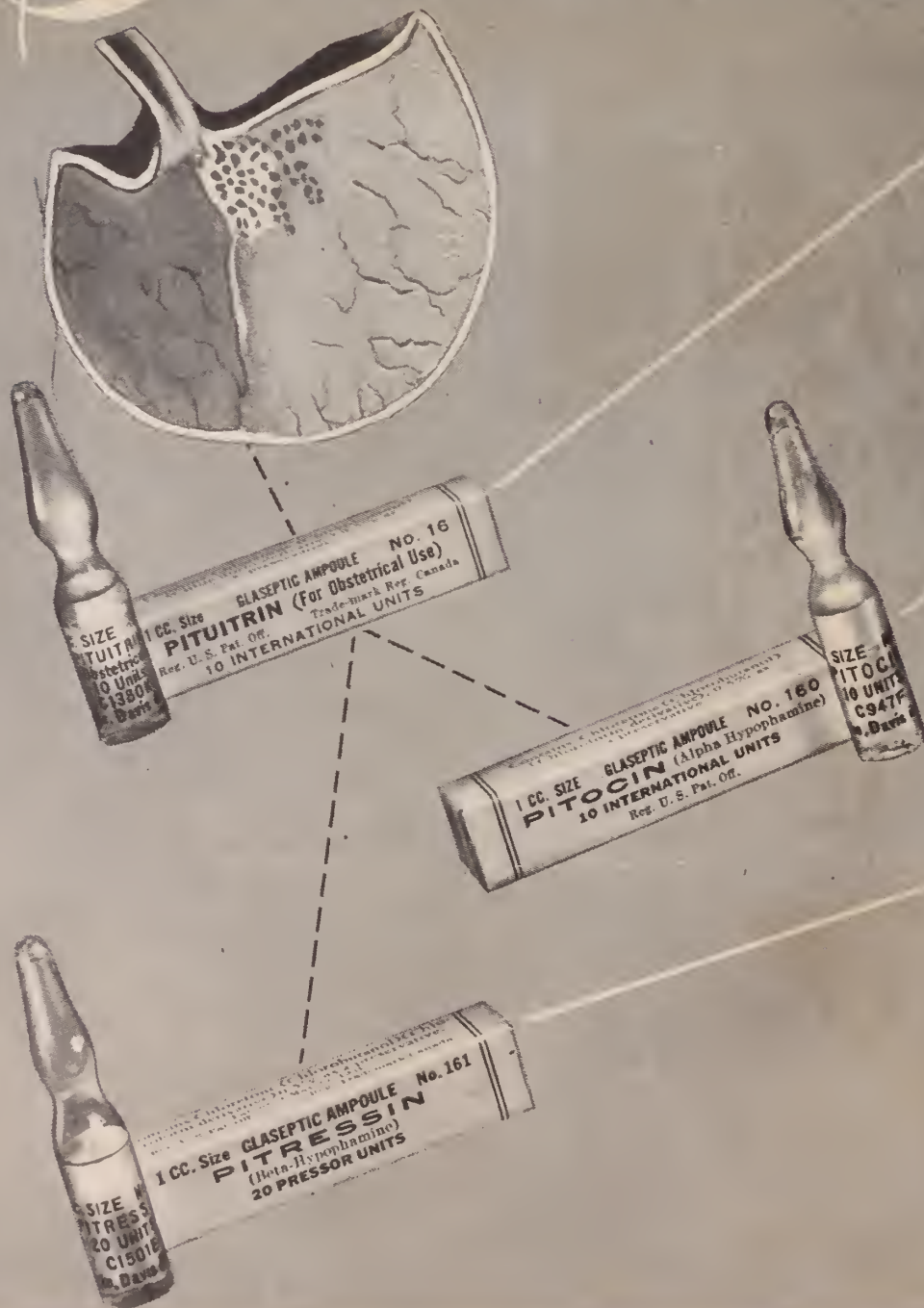
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		or (b) Intramuscularly: 10,000 to 20,000 every 3 or 4 hr.	40,000 to 120,000 or more	(b) Concentration: 5000 U. per cc. normal saline.
		or (c) Intramuscular drip	40,000 to 120,000 or more	(c) Total daily dose in 250 cc. normal saline.
Infants	5000 to 10,000	3000 to 10,000 intramuscularly every 3 hr.	20,000 to 40,000 or more	Each dose in 1 or 2 cc. of normal saline.
Chronically infected compound injuries, osteomyelitis, etc. Adults and children	5000 to 10,000	10,000 every 2 hr. or 20,000 every 4 hr. intramuscularly or intravenously. Larger doses may be necessary at times.	40,000 to 120,000 or more	Concentration for intramuscular inj.: 5000 U. per cc. normal saline. For intravenous inj.: 1000 to 5000 U. per cc. Supplement with local treatment.
Sulfonamide Resistant Gonorrhea	20,000 every 3 hr. intramuscularly for 5 doses		100,000	Results of treatment should be controlled by culture of exudate.
Empyema Adults and children	30,000 to 40,000 once or twice daily into empyema cavity		30,000 to 80,000	Dissolve in 20 to 40 cc. normal saline and inject into empyema cavity after aspiration of pus.
Meningitis Adults and children	10,000 once or twice daily into subarachnoid space or intracisternally		10,000 to 20,000	Concentration: 1000 U. per cc. normal saline.
Bacterial Endocarditis Adults and children	25,000 to 40,000	25,000 to 40,000 every 3 hr. intramuscularly	200,000 to 300,000	Continuous treatment for 3 weeks or longer. In a few cases the intravenous drip is more advantageous.

*Based upon recommendations by Chester S. Keefer, War Production Board Penicillin Leaflet, Apr. 1, 1945; and by Walloce E. Herrell and Roger L. J. Kennedy, *Journal of Pediatrics*, 25:505, Dec., 1944.

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Diagnosis and Treatment of Bronchogenic Carcinoma

LIEUTENANT COMMANDER HERBERT D. ADAMS, M.C., U.S.N.R.

Bronchogenic carcinoma, since it comprises from 5 to 10 per cent of all carcinomas, requires considerable consideration. I will not make an effort to cover this subject completely but to point out chiefly the practical important clinical and surgical aspects of this type of carcinoma.

The effective treatment of bronchogenic carcinoma, in keeping with the principles of surgical management of carcinoma in general, demands as radical extirpation of the primary lesion as possible and the resection of the regional lymph glands. This means total pneumonectomy and resection of as many of the hilar lymph glands as possible. Successful results in these cases depend chiefly on two factors: first, operability, and secondly, primary healing of the hilar structures, and of the thorax, without pleural infection or drainage.

DIAGNOSIS

In general, operability depends chiefly on early diagnosis, and primary healing results only from the proper technical management of the hilar structures, particularly the bronchial stump, the prevention of residual infection by meticulous protection and walling off of the pleura and wound, and the judicious use of the sulfonamides and penicillin.

Unfortunately, the low operability in this disease is one of its most disheartening aspects. As in carcinoma of the stomach, significant symptoms tend to develop late, and difficulties in diagnosis tend to further prolong this important time factor. Therefore, the medical profession should make a greater effort to educate the public regarding the early symptoms of this disease. It is equally important for the medical profession not to overlook this diagnosis, and not to delay proper studies in patients with chronic cough, wheezing, sputum, hemoptysis, pain, or atypical pneumonia. Roentgenologic studies interpreted by a competent roentgenologist, bronchoscopy, and consultation with thoracic specialists on abnormal findings, will go far in increasing the operability.

The symptomatology of bronchogenic carcinoma in general follows one of two clinical courses. In the first group there is an insidious development of symptoms, beginning with a persistent cough and varying amounts of sputum, with or without blood, treated usually for months as a chronic bronchitis until the development of cachexia makes the diagnosis obvious. The second group have a chronic cough for a varia-

ble number of months but continue in a fairly good state of general health and carrying on their work, until they suddenly develop the symptoms, clinical signs, and general reaction of a pneumonia. This, of course, is due to an acute infection and pneumonitis developing in the lung distal to the obstructing bronchial carcinoma. This group of patients is almost invariably followed along under a diagnosis of an atypical pneumonia, and more valuable months are lost without adequate effort to make a specific diagnosis or rule out carcinoma by bronchoscopy. The diagnosis finally becomes evident since these patients never regain their former strength or health after such an episode, and rapidly go downhill thereafter. In each instance only the most careful study, interpretation of x-rays, and the all important bronchoscopic study, will give these patients the only chance they have of reaching the thoracic surgeon in an operable stage.

PROGNOSIS

The prognosis, based on a bronchoscopic biopsy and pathological classification, is also of considerable importance. In the order of favorability of prognosis: the epidermoid carcinomas are definitely the most favorable; the adeno-carcinomas, intermediate; and the undifferentiated or "oat cell" type present an extremely grave prognosis at any stage.

TREATMENT

As with carcinoma of other organs, a clinical estimate of operability is often difficult and must eventually be established by surgical exploration. However, there are certain definite indications of inoperability. These are: severe thoracic pain, serous pleural effusion, metastatic cervical glands, recurrent laryngeal nerve paralysis, and a bronchoscopic finding of invasion of the carina of the trachea or the pathologic classification of the carcinoma as an undifferentiated or "oat cell" type. As in other fields, the borderline cases must be subjected to an exploration to determine operability. Such an exploration of the thorax usually requires just as wide an exposure of the hilar structures as is required for total pneumonectomy, and often considerable difficult dissection of the mediastinal aspect of the lung is necessary.

Probably the most difficult surgical problems in this field are the cases which present x-ray findings and a clinical course typical of bronchogenic carcinoma in which, for one reason or another, a bronchoscopic biopsy could not be obtained. On exploration of such cases the diagnosis may still be difficult because of the extensive inflammatory reaction both in the lung and in the regional glands, which gross-

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ly may very closely simulate carcinoma or obscure the carcinoma deep within the inflammatory process. For the same reason biopsies and frozen section may not be reliable. As a result, total pneumonectomies have been done for purely inflammatory lesions rather than miss a deep seated carcinoma. An occasional pneumonectomy of this type is probably justified, especially with improved technique and low operative mortality.

The technical aspects of total pneumonectomy involve chiefly a properly administered intratracheal anesthetic, the prevention of shock by the routine use of transfusions during operation, adequate exposure, prevention of contamination of the wound and pleura by careful walling off with cellophane-lined gauze packs in conjunction with the use of the sulfonamides or penicillin both locally and systemically, and finally, the effective management of the hilar structures. Careful individual ligation of the hilar vessels with silk ligatures reinforced with stitch ligatures will control the blood supply to the lungs in an effective and safe manner.

CLOSURE OF THE HILAR STUMP

The management of the bronchial stump in total pneumonectomy, however, is still an inadequately solved technical problem, as is evident from the variety of methods advocated, and the continued high incidence of bronchial fistula in spite of these improved methods. The importance of obtaining primary healing and closure of the bronchus cannot be overemphasized. Upon it depends a relatively easy convalescence and immediate rehabilitation of the patient for the time he remains free of the carcinoma, as compared with a prolonged disability out of proportion to his life expectancy, plus a series of secondary operations ranging from thoracotomy and drainage to extensive thoracoplasty to close the residual empyema cavity and the bronchial fistula. The latter is dependent, of course, upon whether he survives the serious initial effect when the fistula develops, with the attendant imminent dangers of pneumonia in the remaining lung or death from sudden, widespread pyothorax on the operative side. Only immediate and adequate drainage can prevent a high mortality from this serious complication. Then there follows an uncertain period in overcoming the acute phase of the infection, and finally, the chronic stage with the essential secondary operations to obliterate the chronic empyema cavity and close the fistula. The high mortality and prolonged morbidity can be prevented, and depend therefore on one of the most important technical aspects of total pneumonectomy, that is, the method of closure of the bronchial stump.

The usual accepted method is anteroposterior closure of the end of the stump with simple interrupted silk sutures reinforced by through and through mattress sutures in one or more rows placed proximal to the end row. This has not proved entirely satis-

factory, and various methods are now used to reinforce the stump, such as turning down a pleural flap or using a free lung graft to cover it. These methods have not entirely solved this problem, and it is for this reason that the following method, which has given excellent results, is recommended.

Delayed healing and bronchial fistula are the result of either impaired blood supply, infection, or persistent malignancy in the stump. It has been shown that healing and solid closure take place at the very end of the stump. Therefore, the rows of mattress sutures placed proximal to the end fail to produce permanent obliteration or healing at this level, and in addition, probably diminish the blood supply to the end where union must take place. For the same reason, clamping the bronchial stump before suturing is not recommended. A clamp is placed distal to the point of division to prevent spillage from the specimen during resection. The anesthetist should be warned to obtain a deeper level of anesthesia. Instead of cutting the bronchus completely, it is first cut across a little at a time, closing the stump with interrupted sutures as fast as it is cut across.

A routine high amputation within 1 cm. or so of the carina is done in this way, and the end closed anteroposteriorly with a single row of carefully placed No. 9 silk sutures. The peribronchial tissues at this level are much thicker and strong enough to support adequately a second row of silk sutures to buttress these tissues over the stump. To obtain an unobstructed exposure of the bronchus at this high level of section, it is necessary to ligate and divide the azygos vein on the right side and to mobilize and retract the vagus nerve on the left side. The pleura is then closed over the stump and the other hilar structures.

In my last 5 consecutive cases of total pneumonectomy for carcinoma I have used this technique with excellent results. These cases are presented briefly to show the rapid primary healing of the thorax and freedom from complications.

REPORT OF CASES

CASE 1. A 44-year-old clerk gave a history of cough, sputum, pain in the chest and weight loss of a year's duration. Roentgen examination showed left lower lobe atelectasis. Bronchoscopy showed narrowing of the main stem bronchus. The left lower lobe bronchus showed granulation tissue on the posterior wall, which on biopsy was reported as epidermoid carcinoma. After careful preparation, including a proper blood level of sulfadiazine, a total pneumonectomy with resection of the hilar glands was done. His thorax healed by first intention, and following an uneventful convalescence, he was discharged from the hospital on the eighteenth post operative day in good condition. The pathologic report was epidermoid carcinoma, grade 3, with metastasis to one node and chronic pneumonitis.

CASE 2. A 67-year-old plumber gave a history of chronic cough, sputum, hemoptysis, weakness and weight loss of a year's duration. X-ray examination showed an atelectasis of the right lower and middle lobes. Bronchoscopy showed a mass in the right main stem bronchus, biopsy of which re-

vealed an epidermoid carcinoma. After careful general preparation including the systemic administration of sulfadiazine, a total pneumonectomy with resection of the hilar glands was done. His thorax healed by primary intention, and following an uneventful convalescence, he was discharged from the hospital on the twentieth day in good condition. The final pathologic report was epidermoid carcinoma, grade 2, with negative nodes.

CASE 3. A 59-year-old salesman gave a history of cough, sputum, hemoptysis, dyspnea, intermittent fever and weight loss of six months' duration. X-ray examination showed an atelectasis and consolidation of the right lower and middle lobes. Bronchoscopy showed a mass occluding the right lower lobe bronchus, and biopsy revealed an adenocarcinoma. After careful preparation and administration of sulfadiazine, a total pneumonectomy with resection of the hilar glands was done. Following this he made an uneventful convalescence. The thorax healed by first intention, and without difficulty in this respect, although his stay in the hospital was prolonged to four weeks due to difficulties with asthma and renal function. However, he was discharged in good condition.

CASE 4. A 48-year-old farmer gave a history of an atypical pneumonia six months before admission, followed by a chronic cough, sputum, hemoptysis and weight loss. X-ray examination showed atelectasis of the left upper lobe. Bronchoscopy showed the bronchus stenosed and angulated, and it was impossible to take a biopsy specimen. Lipiodol injection showed the upper lobe bronchus to be occluded. After careful preparation and the administration of sulfadiazine, a total pneumonectomy with resection of the glands of the hilus was done. He had an uneventful convalescence, and his thorax healed by first intention. The final pathologic report was epidermoid carcinoma, grade 3, with glandular involvement. Three weeks following operation he was discharged from the hospital in excellent condition.

CASE 5. A 52-year-old metal buffer gave a two years' history of cough, sputum, wheeze and weight loss. X-rays showed a large, rounded mass filling the right lower lung field. On bronchoscopic examination no intrabronchial tumor was visible. No biopsy specimen was taken. After careful general preparation and sulfadiazine administration, a total pneumonectomy with high section of the bronchus and closure by the described method was done. The chest healed in one week, and the patient was discharged from the hospital in three weeks. The pathologic report was epidermoid carcinoma with extensive necrosis and negative glands.

SUMMARY AND CONCLUSIONS

The above described method, the high amputation

of the bronchus near the carina, is recommended because it fulfills the following important considerations:

1. The most radical operation possible can be done with reference to the carcinoma, which frequently extends, especially in the membranous aspect of the bronchus, considerably farther proximally than can be observed grossly.
2. The peribronchial and hilar glands, including those important ones at the bifurcation of the trachea, can be resected.
3. The bronchial tissues at this level show less reaction than those closer to the obstructing lesion, less edema, and less infection. Therefore, closure is in more healthy tissues and with better chance of primary healing.
4. The peribronchial tissues at this level constitute a distinct structure that can be strongly buttressed over the stump.
5. During the postoperative stage there should be less accumulation and stasis of secretion and infection than in the longer stump.
6. Theoretically at least, there is less possibility of abnormally high pressure developing on respiration and particularly on coughing than with the longer stump.

For these reasons, a routine high section of the bronchus almost flush with the carina is recommended, closing the stump with a single row of simple silk sutures, and buttressing the end with the strong peribronchial tissues which are present at this level.

The necessity for early diagnosis in bronchogenic carcinoma is again stressed, since total pneumonectomy and resection of the hilar glands is now a highly standardized surgical procedure, carrying a relatively low mortality and a good prognosis in operable cases, especially those in which the regional glands are not yet involved.



Diagnosis of Cancer of the Gastro-Intestinal Tract

COMMANDER ARTHUR C. CLASEN, M.C., U.S.N.R.

The increase in the prevalence of cancer during the past few years has aroused the medical profession as well as the laity to concerted action in determining its etiology and management.

In 1900 cancer ranked ninth in the mortality tables of the United States, and in 1940 it was in second place. Even though one cannot entirely depend upon statistics it is nevertheless true that its prevalence relative to other diseases has increased.

Dorn, senior economist of the United States Public Health Service, in a recent survey of cancer in gen-

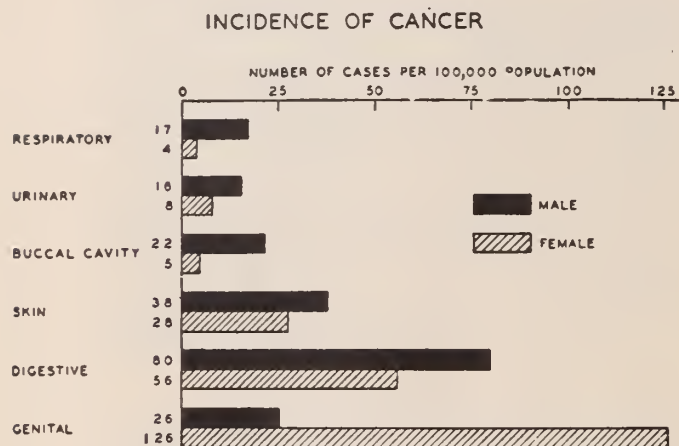


Fig. 1. Incidence of Cancer per 100,000 population.

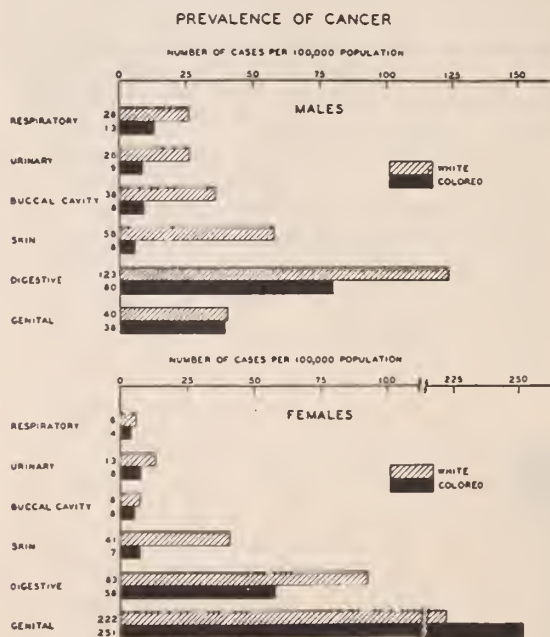


Fig. 2. Prevalence rates of cancer for separate primary sites by sex and color of population (standardized for age on the total urban population of the United States, 1940).

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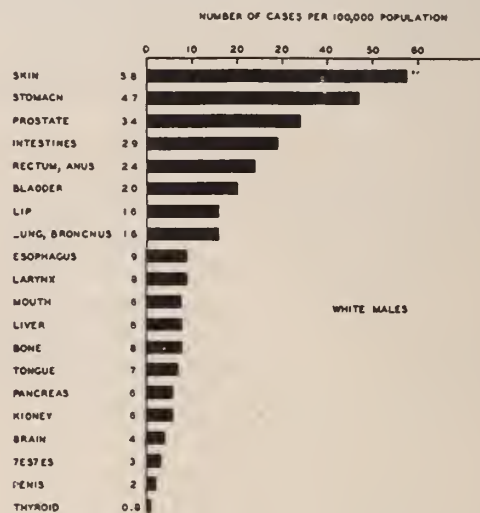


Fig. 3. Prevalence rates of cancer of specific primary sites, white male population. (Rates are standardized for age using the total urban population of the United States, 1940, as standard.)



Fig. 4. Prevalence rates of cancer of specific primary sites, white female population. (Rates are standardized for age using the total urban population of the United States, 1940, as standard.)

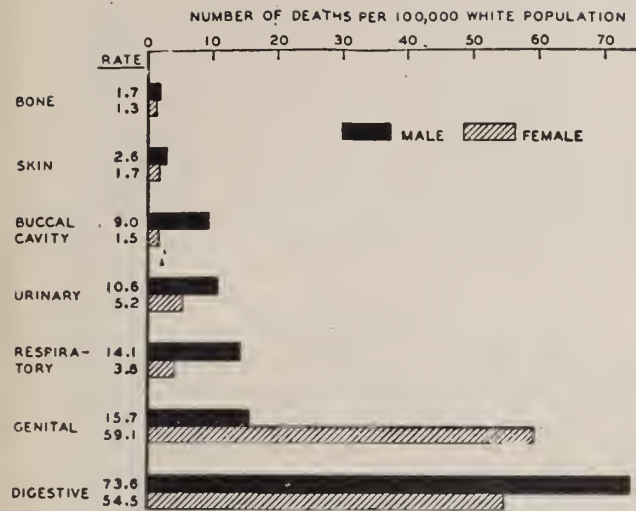


Fig. 5. Number of deaths per 100,000 white population as a result of cancer.

eral, found that 40 per cent of all malignancies occur in the gastro-intestinal tract.

It has been estimated that in the United States about 38,000 persons die annually from cancer of the stomach and some 15,000 die from cancer of the colon.

CANCER OF THE STOMACH

It has been said that of every one hundred patients with gastric cancer entering American hospitals today one-half are found inoperable and are discarded without hope of redemption. Of the fifty operated upon, one-half are found to have resectable lesions and the other half are doomed as far as cure is concerned, even though palliative relief is obtained by surgical means. Therefore, cure becomes possible for only twenty-five of the original number. And since resection mortality, which varies with the particular surgeon, is about 20 per cent, five of the twenty-five patients will die of the operation and twenty will survive. However, only two of the original one hundred will survive the five- or ten-year follow up period. This is a deplorable record.

Since about one out of four or five gastric carcinomas is resectable, and half are surgically rejected, it is obvious that either the first medical consultant has failed to recognize early symptoms of the disease or the patient has procrastinated too long before seeking medical advice.

Therefore, to reduce the mortality rate, cancer must be recognized earlier. This is a problem for both the physician and the individual patient. The physician should not delegate the responsibility to the roentgenologist, who frequently has no assistance

from the physician or from the patient regarding the early symptoms. This may lead to a negative report, which often has a bad effect on the ultimate outcome. In the presence of early symptoms of altered gastro-intestinal physiology, x-ray examinations should be repeated frequently, monthly if necessary, as long as symptoms persist. Boehs, of Philadelphia, in a survey of gastric cancer, noted that usually three to twelve months elapse between the onset of the first symptoms of cancer of the stomach and the establishment of the diagnosis. The average duration of symptoms before a physician is consulted is about six months and the average duration of symptoms before the diagnosis is established is less than a year. Unfortunately more than one-half of gastric carcinomas have extended beyond the stomach before the patient reaches the surgeon.

Early diagnosis is the keynote, as it is directly related to the curability rate. And early diagnosis is obviously lagging far behind improvement in surgical technique in the field of adequate cancer removal. It is the medical man through his influence for or against surgical intervention who plays a role which may exceed in practical significance that of the surgeon.

The familiar clinical picture of gastric carcinoma is that of the advanced or non-surgical stage. That potential or actual gastric carcinoma may exist with little or no indigestion, without weight loss, without anacidity or palpable epigastric tumor, does not seem to be sufficiently appreciated. There is no characteristic onset of cancer of the stomach. Any lesion in the lower end of the stomach causing functional changes in tonus or motility of the pyloroduodenal region may cause an ulcer-like syndrome, a classical early symptom of cancer of the stomach, and which in 80 per cent of cases is relieved by soda and diet.

Except in cancer of the cardia and pylorus early symptoms are often absent until the growth is associated with ulceration, bleeding, obstruction, secondary infection, symptoms of metastasis, or other phenomena of advanced disease. Obviously in the absence of early symptoms an early diagnosis is impossible except by periodic complete health examinations. Early diagnosis may be made, however, when first symptoms appear. One must be on the alert for disturbances in normal physiology (reversal of peristalsis), such as epigastric discomfort described as fullness or burning after meals. Belching may be disturbing to a patient previously free of this. The patient may go on a self-prescribed diet for months and obtain relief by eliminating certain foods and by reducing the amount of his meals. He may not consult his physician until the dyspeptic syndrome is well established as a daily event in spite of his self-prescribed diet.

Other early manifestations are diminution or loss of appetite and slight nausea—all disturbances in gradient, gastric mechanics or motility. In the begin-

ning there may be a feeling of satiety after eating less than the customary amount of food. An actual distaste or dislike for certain foods may ensue. There may be a craving for highly seasoned foods to account for the early altered gastric chemistry. Eventually nausea, periodic or continuous, becomes so annoying that the patient markedly restricts his diet. These symptoms may persist for several months in the absence of epigastric pain, weight loss or anemia. It is well to remember that practically all neoplasms of the stomach give a history of dyspepsia of some form or other, and are temporarily relieved by self prescribed soda or a non-surgical ulcer regimen by the physician.

It is inexcusable not to carry out diagnostic studies in any patient, regardless of age, before prescribing a palliative ulcer regimen for any type of dyspepsia. Modern roentgenology has decreased the possibility of failure to demonstrate lesions of the gastro-intestinal tract to a small percentage of cases. Usually a single x-ray examination reporting a normal stomach is accepted as ruling out disease. Repeated x-ray examinations, however, should be made before accepting a negative finding with positive clinical findings. Statistically about five per cent of early carcinomas are not demonstrable roentgenologically, but in the course of time they become demonstrable. Frequently the roentgenologist is unable to state definitely if a lesion is benign or malignant, and he may report ulcer. It is in this group of patients, in which the lesion is a localized malignant ulcer, that advocates of medical management may delay operation beyond the point of cure.

The speed with which tumors of the stomach develop varies tremendously. Occasionally a fulminating inoperable cancer is encountered in young adults apparently enjoying good health until a few days before seeking medical advice. A delay of days or a few weeks in diagnosis may mean a fatal outcome for this type of case. Just recently we have observed such a course in two young adults, 18 and 20 years of age respectively. There are no absolute x-ray criteria for differentiating malignant from benign ulcers, malignant from benign growths and intrinsic from extrinsic lesions. Gastroscopy aids in this type of case. It is also advantageously used in that group of cases in which the x-ray findings are doubtful or negative in the presence of gastric symptomatology, or where the x-ray findings do not correspond with the clinical findings. Frequently following medical management we accept the x-ray appearance or size of a defect as a guide in differentiating benign from malignant lesions. Occasionally malignant ulcers may appear improved in the x-rays, and benign lesions may appear larger. This may be due to the reduction of the inflammatory process about a malignant ulcer, which may make it appear smaller or even disappear completely. And in the case of a benign ulcer it may roentgenologically appear larger while actually under-

going healing. This may be due to the fact that the edematous mucosa prevents barium from entering the defect at the first examination, and following treatment there is reduction in swelling permitting more barium to enter through the neck of the lesion to fill the ulcer crater. Gastroscopy has much to offer here in distinguishing a benign from a malignant ulcer. It also aids in differentiating between a benign and a malignant lesion and aids in the gross classification of the type of neoplasm, thereby aiding in the prognosis and estimation of operability.

GASTROSCOPY

Gastroscopy should be regarded as an adjunct to x-ray study in gastric disturbances. It is an important diagnostic aid in cases where a suspicion of malignant disease of the stomach is suggested by clinical symptoms when the x-ray findings show no abnormalities or are of doubtful significance. Some carcinomas in the posterior wall of the stomach, which are not detected by roentgenography, may be diagnosed gastroscopically. Roentgenography, however, should always precede gastroscopy to avoid the possibility of perforating a carcinoma, particularly in the cardiac region.

It is worth noting that a negative gastroscopic examination does not exclude the possibility of cancer. Many lesions in the pylorus and so-called 'blind areas' cannot be seen through the gastroscope. Also, if the cancer is of the invasive intramural type without producing bulging or ulceration of the mucosa, the findings may be negative. A wider use of gastroscopy may discover many benign lesions that may be considered precancerous. Also it may give information regarding the type of growth and its invasiveness, which may help in estimating prognosis and operability.

It is estimated that about 65 per cent of ulcers in the immediate pyloric area and 90 per cent on the greater curvature are malignant.

The knowledge of methods of transmission of carcinoma to surrounding and distant structures is of practical importance to the clinician in making a decision referable to operation. Suffice it at this time to say that involvement of glands at the inner end of the left clavicle and in the left axilla is an index of disseminated or late carcinoma. The same is true of retro-peritoneal and inguinal adenopathy in which biopsy shows cancer cells. Bone marrow biopsy likewise may be of assistance. Approximately 75 per cent of all cases of gastric carcinoma subjected to operation cannot be cured because of demonstrable metastasis.

PANCREATIC CARCINOMA

The association of dyspepsia, loss of weight, or obstructive jaundice, with or without pain, with negative x-ray and gastroscopic evidence, should always

suggest the possibility of pancreatic cancer. Early diagnosis of cancer of the pancreas permits radical extirpation of the duodenum and head of the pancreas, which holds promise of prolongation of life. Ferment and alkalinity studies of the duodenal secretion by means of the double tube, following vagal stimulation with insulin, secretin, or mecholyl, is an important aid in differentiating cases of painless jaundice due to cancer of the head of the pancreas from a primary lesion of the common bile duct. When mecholyl is used, the concentration of the enzymes is increased two or three fold, whereas the volume and bicarbonate content remain constant. In cancer of the pancreas there is a marked drop in the volume, alkalinity and in the concentration of pancreatic ferments of the duodenal contents, whereas in cancer of the biliary system there is no change in volume concentration of enzymes or bicarbonate content. In early cancer of the pancreas there is also a progressive rise of the blood amylase and lipase values. However, in late cases of pancreatic cancer blood amylase and lipase values remain normal.

CANCER OF THE COLON

Carcinoma of the colon accounts for at least 11 per cent of the deaths from cancer in the United States. The colon is, however, a favorable site for cure when carcinoma is diagnosed early.

The symptoms of this disease may be insidious to a point of complete hopelessness, but are usually sufficiently characteristic to cause the patient to seek medical advice at a curable stage.

Early signs of cancer of the colon are change in bowel habits, intermittent abdominal discomfort, loss of blood from the bowel, anorexia, loss of weight and progressive fatigue. These symptoms may be very mild, due to the elasticity and large calibre of the bowel, until obstruction, a late symptom, appears. Curability in spite of this is rather high.

The time-worn theory that growths of the right half of the colon always produce cachexia and anemia, and growths on the left side almost invariably produce obstruction, is not true. Frequently in cancer of the left colon there is pain in the lower right abdominal quadrant, clinically resembling appendicitis. This is due to the fact that the right colon or caecum is the most distensible part of the large bowel and is pain-producing when its peritoneum becomes distended. The use of the Miller-Abbott tube as a diagnostic measure is fully appreciated. Not infrequently routine sigmoidoscopic examination reveals a polyposis which is a forerunner of malignancy. However, when the search for the cause of bleeding from the large bowel results in normal sigmoidoscopic and x-ray examination of the stomach and small and large bowel, adenoma or papilloma must be suspected. The incidence of bleeding, or recurrent melena, is high in tumors of the ileum or jejunum.

Intussusception or repeated attacks of some degree of acute, chronic or recurring obstruction must make one alert for polypoid carcinoma of the ileum. In intussusception, marked tenderness or muscle spasm is usually absent because the peritoneum is protected from the strangulated segment by the sheath of the intussusception. Furthermore, the pain of intussusception differs usually from the colic of obstruction. Roentgenographically it is characteristic.

HEPATIC CANCER

Since there are no early signs of primary cancer of the liver we shall pass it over only to mention that this disease in the United States is relatively rare but in China, Korea, the Philippines, and South Africa, it ranks second in frequency among cancers of the gastro-intestinal tract. It is assumed that this high incidence is due to a dietary (riboflavin) deficiency in addition to the high frequency of duodenal parasites, especially flukes.

ESOPHAGEAL CANCER

It is an established fact that pain in its relationship to esophageal disorders has received very little attention. It is often one of the earliest manifestations of disease of the esophagus, but if not associated with dysphagia is often misinterpreted as functional in origin since the pain is often a considerable distance from the esophageal lesion.

Esophageal pain is primarily dependent on the state of tension of the esophagus and its structural adaptability. Pain in the upper portion of the esophagus is more likely to be situated over the thorax at the site of the lesion. Disturbances of the lower portion of the esophagus give rise to diversified distribution of pain.

In carcinoma of the esophagus, esophageal pain of varying intensity is present in about 75 per cent of cases, and is more prone to be present in carcinomas that infiltrate the walls of the esophagus than in large polypoid growths that project into the esophageal lumen. The pain associated with carcinoma of the esophagus varies considerably in character. It is usually burning in type and mild in nature but may be so severe that morphine is required for relief. The distress usually is situated over the midline of the thorax, corresponding fairly accurately with the underlying esophageal lesion, and occasionally extends into the back. However, it may be referred to the abdomen, face or neck, and not infrequently down the arms.

SUMMARY

Medical management of an ulcer type of dyspepsia should not be instituted in any patient without a complete x-ray examination of the entire gastro-intestinal tract, a sigmoidoscopic examination, and when necessary gastroscopy in addition to an analysis of the gastric contents, blood and stools. An adequate response to medical management does not preclude cancer. Cancer of the gastro-intestinal tract must not be considered a purely surgical responsibility or surgi-

cal disorder. It is worth while remembering that more than 90 per cent of the problem of cancer of the gastro-intestinal tract is in the hands of those who see the patient before he reaches the surgeon.

Since cancer is a controllable and curable disease in its early phases, both the physician and the public must be cancer conscious. We must reduce the medical-diagnostic—surgical interval if our goal is to cure cancer.

DISCUSSION

LT. COL. L. M. GARRETT, M.C., A.U.S.: Since the great majority of malignancies of the gastrointestinal tract amenable to surgery are located in the stomach and colon, I shall confine my discussion to the early x-ray diagnosis of such lesions in these locations.

Roentgenologic examination of the stomach is a very accurate procedure, particularly when done by experienced observers. However, errors in diagnosis do occur, and it is these that I wish to discuss. Probably the most important single factor in the accurate diagnosis of any lesion of the stomach is a rigid adherence to an established routine. If and when anything unusual is seen, special procedures may be instituted but these special procedures must never interfere with the following of the established routine examination of all parts of the stomach.

Fluoroscopy is still considered by most roentgenologists to be the most accurate single method for examination of the stomach. However, in recent years the use of the filming fluoroscope or the so-called "spot film" technique has become of increasing importance. The ideal examination of the stomach therefore consists of a careful fluoroscopic examination combined with routine and special spot films taken with fluoroscopic control and of course the usual films made with the patient reciling on the Bucky diaphragm.

There are two locations in which errors of diagnosis in malignant lesions are most frequently made: namely the cardiac and prepyloric regions. Lesions of the cardiac end of the stomach are quite frequently overlooked. If they are seen it is usually relatively easy to arrive at the conclusion that they are malignant lesions since benign tumors are rare in this location. On the other hand, lesions in the prepyloric end of the stomach are usually not overlooked, but the determination of whether the lesion is benign or malignant is very difficult.

In any examination of the stomach the cardiac end should be scrutinized with great care, especially in people suspected of having carcinoma or in people above the age of 30. Preliminary fluoroscopic examination of the gas bubble of the unfilled stomach will often show irregularities of the gas bubble or a mass projecting into the bubble itself. The fluoroscope should always be fixed at the esophageal entry into the cardiac end of the stomach when the first swallow of barium is taken. Small malignant lesions in the cardia will often cause a splitting or deviation of the barium stream when they cannot be observed in any other fashion. Involvement of esophagus in the malignant lesion will alter the method of emptying of this organ. The emptying may be delayed, or the orifice may be rigidly patulous and empty in a continuous stream. After the patient has had one or two swallows of barium he is lowered into the Trendelenburg position and the outlines of the cardia noted. The patient is rotated into each oblique, and may even be turned over and the cardia viewed in the prone position. Then the patient is returned to the erect position. This procedure coats the mucous membrane of the cardia with barium and this combined with the air bubble gives an excellent double contrast view of the cardia. At this time spot films should be made with the patient erect. With this double contrast method polypoid tumors projecting into the lumen are seen with comparative ease, and of course any ir-

regularity of the outline of the gas bubble is accentuated. Distorted rugae may now also be visualized. The flexibility of the cardiac end of the stomach cannot be determined by palpation. However, a good idea as to the flexibility can be gathered by observing the effect of cardiac pulsations on the wall and by the molding of the cardia by movements of the diaphragm. Often a rigid infiltration of a scirrhus carcinoma in this region can be detected by the fact that the lower end of the esophagus and the entire cardia move "en bloc" without alterations of the contour during cardiac pulsations and respiration. The space between the diaphragmatic shadow and the gas bubble should also be observed for widening. Often the widening of this space is the first indication of a malignant lesion. It must be remembered that the presence of a large amount of barium in the stomach will often obliterate early small changes in the cardiac end of the stomach when patient is observed in the Trendelenburg position. This is probably one of the greatest single causes of error in detection of lesions in this portion of the stomach.

As stated previously, lesions in the prepyloric end are usually easily visualized. If there is extensive infiltration of the wall with or without polypoid tumors the diagnosis is usually obvious. If a typical "meniscus sign" is seen, a diagnosis of small ulcerating carcinoma can be made with a great deal of accuracy. However, there are many chronic ulcerating lesions in the portion of the stomach which have the x-ray characteristics of benign lesions; yet the patient has a carcinoma. There are no absolute x-ray criteria for differentiating these lesions.

Dr. Clasen has pointed out that a malignant ulcer may appear to heal under dietary therapy and a benign ulcer may appear to become larger. These findings are very confusing when attempting to distinguish benign from malignant lesions.

Samson and Sossman in a study of ulcerating lesions of the stomach observed at the Massachusetts General Hospital over a period of twenty-five years found that 75 per cent of all chronic ulcerating lesions in the prepyloric one inch of the stomach were malignant. Many of these lesions had no x-ray findings that suggested this malignancy and in many of these cases the gross surgical specimen appeared benign.

It is our belief that if any lesions in the prepyloric end of the stomach show any x-ray or gastroscopic evidence of malignancy the patient should be explored at once. If there is nothing in the original examination to suggest the presence of carcinoma the patient should be followed closely by frequent x-ray and gastroscopic examinations while undergoing medical treatment. Unless the lesion is seen to respond at once under therapy the patient should be followed for a long period of time by frequent x-ray examinations of this portion of the stomach.

Early diagnosis of malignant lesions of the colon depends on employment of double contrast barium enema studies. This examination is accomplished by filling the colon with barium, allowing the patient to evacuate as much as possible, and then distending the colon with air. The coating of barium on the mucous membrane slows up in sharp contrast to air in the lumen. Polypoid lesions as small as one centimeter in diameter may be detected by this means.

The most common cause of error in detecting malignant lesions of the colon is confusing a perforated carcinoma of the sigmoid with a diverticulitis. This mistake can be prevented by detection of the loss of normal mucosal markings in the involved area in the case of carcinoma, whereas in simple diverticulitis the mucosal markings are preserved.

LT. COL. JOSEPH E. WALTHER, M.C., A.U.S.: In my discussion of Dr. Clasen's excellent paper, I shall confine

myself to a consideration of the relative role played by the gastroscope in the diagnosis of early gastric carcinoma.

The symptomatology as presented by Dr. Clasen is the indication for immediate studies of the stomach. In my opinion the roentgenologist should be the lead-off man in the objective diagnostic work-up for three reasons: *First:* The roentgenologist is not confined to a study of the stomach in his examination and hence, his diagnostic scope is much broader than is the gastroscopist's. *Second:* In a certain percentage of patients, the diagnosis of an inoperable lesion from observation of location and progression will save the patient the discomfort of gastroscopy which, while slight, is still somewhat greater than Colonel Garrett's palpatory procedures. *Third:* X-ray may reveal unsuspected esophageal varices or aortic aneurysms which constitute contraindications to gastroscopy. The danger of perforating a lesion high in the cardia, as mentioned by Dr. Clasen, is a lesser and relative evil which also can be avoided by preliminary x-ray examination.

Gastroscopy, in every instance, should follow roentgenological studies when a diagnosis of "No Disease" is made in a patient with symptoms suggestive of carcinoma. As pointed out before, in a small percentage of cases early lesions will be visualized by gastroscopy when missed by x-ray. Also, the symptomatology of some patients can be explained by the gastroscopic finding of chronic gastritis, whose symptoms may be identical with those of early gastric carcinoma.

There are a few gastric lesions, and I refer especially to the so-called malignant ulcer type of lesion, where the gastroscope easily can settle the question of benignancy versus malignancy. Another type of abnormality which frequently results in x-ray suspicion of cancer is benign hypertrophy of the pylorus. In this condition the antrum appears perfectly normal gastroscopically. Fresh in my mind is a patient observed two weeks ago. Four examinations by three roentgenologists resulted in a final x-ray diagnosis of gastric malignancy involving the distal end of the antrum. In the last examination a crater was seen in the filling defect. Gastroscopic examination revealed no abnormality of the antrum or pylorus with the exception of redundant mucosa which was thrown up into folds. However, in view of the strong x-ray evidence of a malignancy, the gastroscopic protocol contained the observation that the patient had a gastroscopically normal stomach but that he should be given the advantage of an exploratory operation. This attitude is justifiable when a skilled surgeon is available. In a telephone conversation I learned today that the patient had a normal antrum with exception of redundant folds.

The gastroscopic diagnostic pitfalls are of two types: those of morphology and those of site. Morphologic difficulties are encountered in benign ulcers with irregular edematous margins; in rare cases of polypoid hyperplasia in hypertrophic gastritis; and in some cases of ulcerative hypertrophic gastritis. Situational diagnostic *pilikia** results when a small lesion is located in the important region of the lesser curvature of the pylorus; on a narrow strip of the posterior wall and a small cone-shaped area on the combined greater curvature and posterior wall.

After gastroscopic examination, the diagnosis of malignancy will be definitely confirmed, denied, or asserted. However, I add hastily and humbly, that in a very small number of early lesions neither the x-ray nor gastroscope can make the diagnosis or the differential diagnosis.

It is in these doubtful cases that one must resort to a third method of arriving at an objective diagnosis of early gastric carcinoma, that is, the microscopic appearance of the lesion. It entails the use of a competent surgeon whose operative mortality for gastric resections in patients who are in good condition without malignancy is no higher than

three per cent. In addition, the surgeon must realize resection is indicated despite his inability to palpate a tumor after opening the abdomen. In 1940 I assisted an excellent surgeon in an operation under similar circumstances. Neither of us could feel any abnormality, and a resection was not done until nine months later—and then with a hopeless prognosis. Occasionally, benign tumors, or rare polypoid hypertrophic gastritis will be resected, but if carcinoma of the stomach is to be licked, early treatment must be instituted. Through necessity, a very small number of benign lesions will be resected in the name of diagnosis—not treatment. If the only surgeon available is one whose operative mortality for gastric resections is twenty per cent or more, the patient's chance of survival will be greater if the judgment of the gastroscopist and roentgenologist errs in the direction of conservatism.

I believe the macroscopic classification of a gastric lesion can be made most satisfactorily by gastroscopy. The importance of classification lies in its prognostic significance. Bailey, in his monumental efforts in classifying brain tumors, brought order to chaos in that field by separating hopeful tumors from the hopeless ones. Likewise, Broder shed much light on malignant tumors as a whole, by classifying them according to cellular differentiation, and attaching a prognosis value to each type. A step in this direction is the adopting of the Borrmann classification of gastric carcinoma. Borrmann recognizes four types of lesions:

Type I: Is polypoid, with broad base and little ulceration. It is nearly always resectable if not too near the cardia.

Type II: Is an extensively ulcerated tumor with a steep and well defined margin. It carries with it the best prognosis, especially if located near the pylorus.

Type III: Is also an extensively ulcerated tumor but one or more margins are not sharp because of infiltration into the submucosa. Prognosis with this type of tumor is always doubtful, especially if the infiltration process is toward the cardia.

Type IV: Is a diffuse infiltrative lesion with little ulceration and whose limits can not be determined by sense of touch. It is always inoperable.

At the present time there is much discussion relative to the possible etiologic or precursor relationship of chronic gastritis to gastric malignancy. It seems certain that some carcinomas develop because of a preexisting chronic atrophic gastritis. This condition satisfies all the criteria necessary to qualify as a precursor of malignancy. These criteria are atypical, embryonic type cells, atypical glands, and mitotic changes. Some authorities have stated that an individual with chronic atrophic gastritis is twenty per cent more liable to develop carcinoma than one with unchanged mucosa. Another point worth mentioning is that practically every gastric malignancy is accompanied by chronic atrophic gastritis, or occasionally chronic superficial gastritis. Consequently, every patient with chronic atrophic gastritis should be gastroscopied every six months in an effort to detect an early carcinomatous lesion. It is probable that often the symptoms described as indicating gastric carcinoma are attributable to the accompanying gastritis and not the small early carcinomatous lesion.

In summary, and conclusion, a successful fight against one of the profession's greatest challenges today necessitates diagnosis of the early lesion. To effectuate this goal, there are required:

Clinicians, alert to the significance of the symptoms of gastrointestinal dysfunction as they pertain to carcinoma of the stomach.

Roentgenologists and *Gastroscopists* who are competent, well-trained, conscientious and ever aware of the life dependent on their judgment.

Surgeons, whose operative technique in gastric resections carries with it a low mortality.

Lastly and importantly, a *public* which is stomach cancer-conscious and educated to come early to the physician on appearance of gastrointestinal symptoms.

* Trouble.—Ed.

The Surgical Treatment of Cancer of the Gastro-Intestinal Tract

CAPTAIN HOWARD K. GRAY, M.C., U.S.N.R.

Because cancer of the gastro-intestinal tract has received so much attention in recent years, further comment at this time would seem to be superfluous. Several extremely discouraging facts stand out so vividly, however, that one is justified in reviewing the present status of the problem, as it is obvious that even greater efforts will have to be expended if any appreciable improvement is to be achieved in the treatment of cancer of the stomach, small bowel, colon and rectum.

SURVIVAL STATISTICS

The seriousness of cancer of the stomach may be emphasized by a comparison of the five-year survival rates of all patients who have a malignant lesion in the more common sites, whether treatment has been given or not. The five-year survival rate after the diagnosis of cancer of the stomach has been made is appreciably lower than the five-year survival rate after a diagnosis of cancer of the fundus of the uterus (55 per cent), breast (71 per cent), uterine cervix (22 per cent), rectum and recto-sigmoid (21 per cent), and colon (15 per cent) has been made.

Walters, Priestley, and I¹ have reported elsewhere the results of the study of a large group of cases of malignant lesions of the stomach. From a study of these cases, it was noted that of all cases in which a diagnosis of a malignant lesion of the stomach was made, operation was performed in only 57.7 per cent (surgical rate) and that resection of some type was possible in only 25.8 per cent. The immediate hospital mortality in the group of cases in which resection was performed was 16 per cent, which, when transferred into terms referring to the total number of patients observed, reduces the number of patients who theoretically have a chance of survival to only 21 persons for each 100. In 28.9 per cent of cases in which a malignant lesion of the stomach was successfully treated by resection, the patients were found to be alive at the end of five years, whereas only 6.2 per cent of the total number of patients observed with a malignant lesion of the stomach were alive at the end of the same period. A similar situation obtains in regard to the five-year survivals of patients with malignant lesions of the colon or rectum, for it has been shown that the surgical rate—that is, the actual rate per 100 persons with cancer of the colon who are operated upon for the disease—is approximately 85 per cent. Surgical removal of the malignant lesion is

possible usually in about one-half of the original number and when those who did not survive the operation have been deducted, it has been noted that only 40–45 of the original 100 persons theoretically had a chance of survival for five years. Actually 15 persons were found to be alive at the expiration of the five-year period. These approximate figures have been given for all malignant lesions of the colon and do not represent specific areas. As is well known, the seriousness of cancer of the colon increases in direct proportion to the proximity to the rectum. Figures of some authors would suggest, however, that the survival rate of persons with a malignant lesion of the rectum or recto-sigmoid is virtually the same as, if not a little more favorable than, that of persons with cancer of the colon. The methods of calculating statistics by different authors have not been consistent, and this may account for certain apparent discrepancies. The main fact remains, however, that the picture of cancer of the gastro-intestinal tract is anything but a happy one and that the glib talk of high survival rates following surgical removal of malignant lesions in these sites is often misleading, for it is usually based on the number of patients who survive the operation and has left out of all consideration those unfortunate ones who succumbed following operation, those who were found to be inoperable at the time of the exploratory laparotomy, and those who were thought to be inoperable even without exploration.

MALIGNANT LESIONS OF THE STOMACH

The fact that early removal of a malignant lesion of the stomach is the only known method of cure has been emphasized repeatedly and is so widely accepted that repetition at this time seems trite and elementary. It may be assumed that because our study had been based on all cases of malignant lesions of the stomach observed in the years 1907–1938, inclusive, the surgical rate of 57.3 per cent and the resectability rate of 25.5 per cent will be low when compared to similar figures based on experience during the last fifteen years. Unfortunately, such is not the case. The ratio of patients operated upon to the total patients who were found to have a malignant lesion of the stomach has varied little during the last fifteen years from the surgical rate for the whole period, and although the ratio of patients who underwent resection to the total number of patients is slightly higher than the rate of 25.5 per cent, the improvement is so insignificant as to be negligible. With the significant improvement in the operative mor-

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tality rate following resection of the stomach during the past fifteen years, however, some increase in the five-year survival rate should be noted.

The answer to this difficult and discouraging problem is not easy. One of the first responsibilities of the medical profession is to spread the knowledge that, with proper care, cancer of the stomach (and of other organs in the broad sense) can be cured if it is attacked vigorously when the process is in its early stages and is localized. This means that early diagnosis is imperative and although Commander Clasen, Colonel Garrett, and Colonel Walthers have just finished discussing with you some of the many perplexing problems in the diagnosis of cancer of the gastrointestinal tract, I should like to stress the fact again that the symptoms of cancer of the stomach may be vague and ill-defined. The layman must understand that there is no typical symptom complex that is characteristic of cancer of the stomach and the physician and surgeon likewise must not wait for the development of characteristic symptoms before considering the possibility of the presence of a malignant lesion of the stomach and insisting upon a thorough examination in order to arrive at a correct diagnosis.

The purpose in treating cancer of the stomach is two-fold. The first is to effect a cure, if possible, and the second is to prolong life and reduce to a minimum the suffering which may be associated with the disease. It is obvious that the first purpose can be accomplished only by extirpation of the malignant mass together with the accessible lymph nodes that are potentially involved, including all of those in the greater omentum. Tumors that are inoperable are usually situated in the cardiac end of the stomach or have spread from a pyloric or fundic position to within the inoperable zone. Not infrequently a lesion that is locally operable will be inoperable because of extra-gastric spread of the malignant process to neighboring lymph nodes, liver, or other structures. As has been pointed out on many occasions, however, extra-gastric extension does not necessarily spell inoperability, for in some instances removal of the primary tumor may be followed by spontaneous recession of malignant tissue that is retained and, in addition, the patient has the psychologic advantage of knowing that his tumor has been removed.

Roentgenologic evidence alone of inoperability should not be sufficient evidence in all cases to deny the patient what benefit may be derived from surgical exploration. This is particularly true of lesions situated primarily in the fundic portion of the stomach or near the cardiac orifice, as great strides have been made in recent years in the transpleural approach to these lesions.

Although less than 50 per cent of the patients who present themselves for treatment of cancer of the stomach show evidence of marked retention of food or of the barium meal, a far greater number give

some clinical evidence of transitory gastric stasis. Large amounts of food residue may be detectable in examination of the patients who have neoplastic lesions which do not invade the immediate neighborhood of the pylorus. Inadequate gastric emptying may be attributable then to reflex antral or pyloric spasm, or perhaps to some disturbance in the function of the gastric musculature. There are other patients having cancer who, although showing no clinical or roentgenologic evidences of retention, nevertheless are found to present signs of dehydration, manifested by dryness of the skin, buccal mucosa and tongue, a sunken facial expression, diminished output of urine, and low blood pressure. In these cases it may be quite as important to devote some care and attention to preoperative management as it is in cases in which there is definite evidence of a block at the pylorus. Even though the patient who is to be operated on shows only minimal evidence of dehydration, it is well to anticipate the possible postoperative depletion of fluids through hemorrhage, vomiting, sweating, and lack of intake of fluid by means of properly supervised preoperative measures. The giving of electrolytes must include efforts to replace quantitatively and qualitatively what has been lost. This must, however, be carried out with some care. Patients with renal disease must be given saline solution with caution. The average intake of sodium chloride has been calculated to be approximately 5 gm. per day, although 10 gm. or slightly more may be taken without apparent ill effect. To patients having no absolute loss of water and salt, 1000 c.c. of physiologic saline solution given intravenously during twenty-four-hour periods should be adequate to insure the required amount of sodium chloride in the tissues. No arbitrary rule of conduct may be laid down in estimating how much fluid and salt should be used routinely. Each patient must be studied and treated individually. A sufficient amount of fluid, that is, approximately 2500 to 3000 c.c. should be given to the average sized adult in order to maintain a normal urine output of 1000 to 1500 c.c. of urine daily. Ordinarily, a patient having a carcinoma of the stomach who is hospitalized for preoperative therapy, if showing some evidence of dehydration but no obvious pyloric obstruction, is given 1000 c.c. of 10 per cent dextrose in normal saline solution intravenously each day. The sugar is added because it furnishes ideal fuel for energy and has a supportive action on the liver. Evidence of tissue edema should lead not only to a study of the concentration of plasma chlorides but also to a determination of the plasma proteins, and if the amount of protein in the blood is deficient, measures to counteract this complication are instituted.

The patient who has gastric stasis requires careful chemical study of the blood to determine the degree of disturbance in the acid-base balance. If the study of the blood reveals, singly or in combination, concentrated urea, an increase in the combining power of

the plasma for carbon dioxide or a diminution of chlorides, an increased amount of intravenously administered solution of dextrose and salt will usually be indicated. The persistence of toxemia in spite of four or five days of intravenous administration of fluids occasionally makes it necessary to give ammonium chloride either by mouth or intravenously. This may re-establish the acid-base equilibrium successfully when its accomplishment by the use of saline solution and dextrose is impossible.

When a patient who has a gastric cancer is referred to the hospital for preoperative preparation, a Sawyer tube is passed into the stomach during the first hospital day, unless such a procedure is contraindicated because of the presence of severe pain suggesting a penetrating lesion, or unless hemorrhage has occurred. Evidence of retention may be demonstrated in this way when there is no clinical suggestion of the complication. In cases in which the patient gives evidence of slightly delayed gastric emptying, a Sawyer tube is passed through the nose or the mouth into the stomach each evening about 9:00 P.M. Removal of the secretions and food residue permits the organ to return to a more nearly normal size and aids in the restoration of its muscular tone. This facilitates the return of normal gastric motility, a very desirable accomplishment toward rapid postoperative convalescence. If repeated lavage is necessary, it is done prior to the feedings except at night, when the stomach is emptied thoroughly. These patients may complain of pain at night. Some alkali or four ounces of milk is then given and this usually controls the nocturnal distress. For dehydrated patients without obstruction who are hospitalized for preoperative care, we suggest a bland, low residue diet with supplementary feedings of semisolids or liquids between meals. Patients who have evidence of retention are placed on a diet consisting mostly of liquids or semisolids. Vitamins are now obtainable in concentrated form and can be included easily in the diets of these patients during their preoperative treatment. In addition, it has been found beneficial to add 100 mg. of ascorbic acid, 5 mg. of thiamin chloride, and 25 mg. of nicotinic acid to the dextrose-saline solution which is administered to these patients daily.

Inasmuch as we are not concerned here primarily with operative technique, suffice it to say that, generally speaking, the most frequent type of operative procedure in cases of gastric carcinoma is the posterior Polya resection. This operation, a modification of the Billroth II procedure, has been and continues to be the most generally used for partial gastrectomy. The Billroth I type of operation has been used less frequently in this country than abroad in the treatment of malignant or benign lesions of the stomach and duodenum. It is generally felt that the Billroth I type of operation does not permit sufficiently wide excision of potentially involved tissue and for this reason it is used only infrequently in the presence of a malignant lesion.

Injudicious postoperative care may cause inestimable harm in a case in which excellent operative procedures have been carried out. Attention to the position of the patient in bed is most essential, for it is important to avoid over-distention of the remnant of the stomach. The Fowler position permits the stomach to remain in its normal position and thus the possible hindrance to free evacuation of its contents is minimized. Fluids by mouth should be withheld for at least seventy-two hours after surgery and then small quantities, not to exceed 15 c.c. an hour, may be given for the next six to eight hours. If this amount is tolerated without distress and untoward symptoms suggesting retention, the quantity may be increased gradually. Supplementary fluids may be administered by proctoclysis, by hypodermoclysis, or intravenously, so that a total fluid intake of not less than 2500 c.c. is accomplished in 24 hours. Should retention develop, similar criteria to those used during the preoperative preparation of the patient are followed. Continuous aspiration of the stomach contents by means of an inlying tube is rarely indicated following resection of the stomach and is to be avoided if possible. The need for aspiration usually is indicated by a feeling of distress, frequent regurgitations, and perhaps a slight elevation in the pulse rate. In certain cases there may be no subjective symptoms and no regurgitation. If under any circumstances the patient's condition does not seem as it should be, even in the absence of any suggestive symptoms, the stomach contents should be aspirated. In uncomplicated cases, a progressive diet consisting first of broth, tea, and other clear liquids may be started in moderation on the fourth day and other items of soft food may be added as reason dictates.

MALIGNANT TUMORS OF THE DUODENUM

Malignant tumors of the duodenum are seen rarely and usually involve the second or third portion. In practically all instances of ulcerating lesions of the duodenum beyond the papilla of Vater, it will be found that the lesion is malignant, while ulcerating lesions proximal to this structure are nearly always benign. Space does not permit more than a casual mention of malignant lesions of the duodenum, but attention should be called to the fact that carcinoma of the papilla of Vater is not a rare disease. Early and correct clinical diagnosis of the presence of the lesion is unusual. The tumor is usually small, grows slowly, and metastasizes late, and even the discerning eye can seldom detect early signs of its presence. In most instances complete and permanent obstruction of the common bile duct does not occur as it frequently does in cases of carcinoma of the head of the pancreas. In fact, the growth may attain considerable size before complete obstruction of the duct occurs. The technique of surgical treatment of lesions in this area is rapidly being perfected. Until recently the best treatment seemed to be palliative procedures aimed at relief of the obstruction. Recently, Whipple

revived interest by his two-stage operation and Trimble has modified that procedure apparently with good results. Both of these procedures embody the principle of block resection for carcinoma. The gastrojejunostomy advised by Whipple and Trimble forestalls the pyloric obstruction which is likely to develop if the patient survives for a reasonable time. Any type of operative procedure for malignant lesions in the third part of the duodenum has been followed by very discouraging results and it is fortunate that one is rarely required to deal with lesions in this area.

JEJUNUM AND ILEUM

Large series of cases have shown that primary neoplasms occur less frequently in the small bowel than in any other portion of the gastrointestinal tract. Raiford² found only 38 malignant tumors of the small intestine in an analysis of 11,500 autopsies from the general pathological laboratory and of 45,000 specimens from the surgical pathological laboratory of the Johns Hopkins Hospital. Others have estimated that approximately three-fourths of the carcinomas of the small bowel affect the duodenum, so that the rarity of the malignant lesions of the jejunum and ileum would not warrant more than cursory mention of them for sake of completeness. Wherever possible, resection of the neoplasm and a wide removal of the mesentery should be done.

COLON

Careful preoperative preparation of patients who have malignant lesions of the colon or rectum requires a minimum of three days, and often a week may be necessary. During this three-day period a high carbohydrate, residue-free diet is employed in addition to mild catharsis. Rectal irrigations are given twice daily and the colon is thus thoroughly cleansed. Benefit from the preoperative use of sulfonamide compounds has been noted; a satisfactory method is the administration of succinylsulfathiazole immediately after admission to the hospital. During the first twenty-four hours all adults are given 360 grains (24 gm.) (60 grains, or 4 gm., every four hours day and night). During the following forty-eight hours, 30 grains (2 gm.) are given every four hours. The last dose is administered about six hours before operation. It has been pointed out that only about 5 per cent of succinylsulfathiazole is absorbed when administered orally but even so, patients have been observed who had reactions apparently due to its use. The manifestations in these cases were erythematous urticaria and dermatitis about the face and upper and lower extremities. Careful estimations of the concentration of the sulfonamide compound in the blood are recommended and intensive sulfonamide therapy should be supplemented by giving sodium bicarbonate or other alkali. If the patient is unable to take these medications by mouth and the sulfonamides must be given by intravenous injection, alkalinizing solutions

should be given parenterally also. For this purpose a 5 per cent solution of sodium bicarbonate, if given cautiously, or lactate Ringer's solution, may be used. So far as is known, the effect of the drug is not impaired by the use of the soda and the alkali prevents the sulfonamide from crystallizing in the renal pelvis, thus obviating a possibly serious if not fatal result.

Rankin and Graham³ have shown that it is important to recognize the different surgical requirements of the two natural divisions of the large bowel, namely: the right half, which extends from the ileocecal valve to the middle of the transverse colon, and the left half, from this point to the rectosigmoid junction. These authors have stated that carcinoma of the right colon anywhere between the ileocecal junction and a point just beyond the hepatic flexure is considered almost unanimously to be treated best by removal of the entire right segment of the colon, with an anastomosis between the terminal ileum and the transverse colon. Preference is given to an ileotransverse colostomy (end-to-side) by a closed method followed by resection of the right half of the colon at a later date. The choice of operations in lesions of the distal colon has seemed to lie among (1) an obstructive resection with or without preliminary cecostomy, (2) a cecostomy or colostomy and subsequent resection of the tumor with immediate anastomosis, and (3) an exteriorization procedure such as the so-called Mikulicz operation. Most surgeons have seemed to feel that primary suture in the left half of the colon is rarely considered to be desirable and have leaned toward a multiple stage procedure such as: (stage 1) primary cecostomy (whether or not obstruction is present, for this procedure will tend to keep the proximal portion of the colon decompressed with the obstructive type of resection); (stage 2) an obstructive resection; (stage 3) application of a clamp to the septum dividing the two approximated segments of bowel and (stage 4) if necessary, closure of the colostomy. For removal of malignant lesions of the rectosigmoid, rectum, and anus, Rankin and Graham have stated that the types of operation which they believe fill most of the needs of the operating surgeon are, in order of their desirability, but not necessarily their availability: first, combined abdominoperineal resection of the rectum and rectosigmoid in one stage (Miles's operation) or the reverse procedure, perineo-abdominal resection in one stage, advocated by Gabriel; second, abdominoperineal resection of the rectum and rectosigmoid in two stages; third, colostomy and posterior resection; fourth, local excision of the growth with or without preservation of the sphincter muscle, a procedure which they consider to be wholly palliative. For lesions low in the sigmoid and the rectosigmoid, Dixon⁴ has reported enthusiastically on the procedure of radical anterior resection of the lower part of the sigmoid colon and the rectosigmoid and re-establishment of continuity of the bowel so as to obviate the necessity of making a permanent colonic stoma. In selected cases, it is obvious that this pro-

cedure would have tremendous advantages even as palliation, for the patients were made more comfortable during their remaining days for having had this type of surgery performed.

CONCLUSION

Obviously this discussion has included only a few of the many problems in the surgical treatment of cancer of the gastrointestinal tract. It is hoped, however, that by repetition of some of these well-known facts in symposia such as this one, new ideas may develop that will result in an improvement in the "salvage" rate of patients with malignant lesions.

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DISCUSSION

LT. COL. EDWARD OTTENHEIMER, M.C., A.U.S.: I think Captain Gray has presented an excellent paper and I agree that the picture of gastro-intestinal malignancy is sufficiently dismal to warrant frequent repetition of some of its salient aspects. It is particularly true because this appalling situation can be considerably improved with the knowledge and facilities already available if only we used them wisely.

The field of cancer in general, and gastro-intestinal cancer in particular, poses one of the most serious problems which confront the medical profession. For many years cancer has been the second most common cause of death in the United States, being topped only by cardio-vascular disease. For this reason alone it would be an injustice to the profession and the public if cancer statistics were not presented as candidly and as completely as Captain Gray has presented them. Progress will be definitely impeded if we focus attention upon isolated reports of low operative mortality in radical surgery for malignant disease of the gastro-intestinal tract. What we want to know, as Captain Gray has told us, is what happens to all cases of gastro-intestinal malignancy admitted to the hospital; how many are so far advanced that even exploration is contraindicated; how many are explored and found to be inoperable; how many die after radical surgery, and how long patients live who have survived radical surgery. If we start at that base line we can begin to make a critical appraisal of the real picture, and I agree with Captain Gray that it is not a rosy one.

However, it is only fair to say that our knowledge of cancer has grown considerably in the past fifteen years. While the specific etiologic factor is still elusive, a mass of valuable and interesting data on the cause or causes of cancer has been accumulating in experimental laboratories.

In addition to etiology we know much more than we used to about the recognition and management of pre-cancerous lesions.

We have a more concise conception of the relative value of surgery and radiation and a better understanding of the indications for the employment of each.

Furthermore, and I think Captain Gray will concur in this, there has been, in the past ten years, a very definite lowering of the operative mortality in radical gastro-intestinal surgery for cancer.

Captain Gray pointed out that in a large series of cases of cancer of the stomach over a thirty-year period the operative mortality was 16 per cent. He was too modest to say that during approximately this same period, the operative mortality for gastric cancer in ten of our largest hospitals was between 30 and 40 per cent, and comparable mortality rates existed for radical surgery of the large bowel and rectum.

But operative mortality for radical gastro-intestinal surgery has been dropping steadily for four reasons:

First: better pre-operative preparation, which, as Captain Gray has shown, includes correction of anemia, replacement of depleted serum protein and electrolytes, and sterilization of the intestinal tract with succinylsulfathiazole, which by the way is far superior to sulfaguanidine for this purpose.

Second: improved methods and types of anesthesia.

Third: improved aseptic technique, and an appreciation of the value of multiple stage procedures where even minor degrees of obstruction are present.

And finally, improved post-operative care, because of our comprehension of balanced blood chemistry, suction-decompression of abdominal distention by Wangenstein, Miller-Abbott, or similar tubes, and chemotherapy.

However, a lowered operative mortality represents at present a fraction of the total problem. The technical advances in surgery will be of little help until we find some way of getting patients into the hospital at a stage when radical surgery can be done—in other words, increasing the resectability rate. This is the factor which Captain Gray rightly said has changed very little in the past thirty years.

And so, I think we might ask ourselves why there has been so little improvement in the detection of early gastro-intestinal cancer, despite increasing knowledge of the disease and greater and more widespread facilities for diagnosis.

A few years ago we undertook a study of the causes of delay in the recognition of cancer. We were interested to find out, first, how much time elapsed between the first symptom noticed by the patient and his first visit to the doctor; and secondly, how much time elapsed between the visit to the doctor and admission to the hospital for definitive treatment. (Arbitrarily, we considered anything over two months as unjustifiable delay.)

In addition, we attempted to find out in each case the reason for the delay. Similar studies have been made by other tumor clinics, and the findings have been essentially uniform.

It was found that in 70 to 80 per cent of cases, delay could be traced to either ignorance, negligence or fear on the part of the patient.

Despite the fact that the study was made in the teeth of the depression, only 2 per cent of patients gave inadequate financial resources as the reason for delay.

In about 15-20 per cent of cases, delay could be attributed to poor medical advice on the part of the doctor.

Further analysis showed that in certain types of malignancy, delay seemed to be consistently the fault of the patient, and almost invariably this occurred, strangely enough, in cancer of accessible organs, such as the skin, lips, mouth, breast, etc.

On the other hand, all the evidence showed that a high percentage of patients with cancer of the gastro-intestinal tract consulted their physicians without delay, and hence it was in this field particularly that delay could be traced to poor medical advice.

I would like to repeat for emphasis that patients with cancer of the gastro-intestinal tract, as a rule, consult physicians early in the course of the disease.

Still further analysis showed that the poor medical advice fell, by and large, into the following categories:

1. Failure of the doctor to appreciate the significance of persistent vague indigestion in a patient in the cancer age group, and hence failing to advise careful x-ray examination.
2. Failure to recommend x-ray examination in a patient complaining of a persistent change in bowel habit.
3. Failure to do a rectal examination.
4. Failure to investigate the cause of blood in the stools.
5. Failure to realize the malignant potentialities of gastric ulcer.

All of this may sound simple and pedantic but these are some of the principal reasons for the present dismal state of the treatment of gastro-intestinal malignancy.

The lesson to be learned from studies of this kind is that future betterment must be largely along educational lines—education of both the laity and the medical profession.

There is another way in which the cancer situation can be improved, and I shall point to it briefly by way of conclusion. The most promising cancer work has come from hospitals and clinics where small groups of men, interested in this field, have been given an opportunity to become proficient in the diagnosis and treatment of various types of malignant disease. This is particularly true of gastro-intestinal cancer.

If a hospital admits 100 cases of operable cancer of the rectum a year, the mortality will be lower if one or two men do all these cases than if 20 different surgeons do 5 cases apiece.

Furthermore, the formation of tumor groups in hospitals stimulates the entire staff to become cancer conscious and cannot fail, ultimately, to increase the incidence of the early recognition of the disease.



Transient Pulmonary Infiltrations (Loeffler's Syndrome)

REPORT OF A CASE

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In 1932 Loeffler¹ observed a series of 37 patients with fleeting pulmonary infiltrations accompanied by eosinophilia. In 1936 he reported a series of 51 cases, a few of them in detail². The roentgenologic findings were various types of parenchymal infiltrations that appeared in a comparatively short time and disappeared just as rapidly. The eosinophilia varied from slight to severe, and there was no direct relationship between it and the pulmonary findings. In his series the disturbance in the general condition of the patients was slight. Coughing was a prominent symptom in many cases, but expectoration was absent or extremely slight. Loeffler believed the origin of these infiltrations was an extremely benign tuberculous process and that they indicated a favorable allergic response to the infection.

Since the first descriptions of transient pulmonary infiltration with eosinophilia appeared, many cases have been recorded with various etiologic factors suggested as the causative agent. Smith³, and Freund and Samuelson⁴ reported cases in asthmatic patients. Beck⁵ (in Hawaii) and Slowey⁶ reported cases apparently caused by parasitic infection. Elsom⁷ reported 2 cases of pneumonitis with eosinophilia in chronic brucellosis. Peirkle and Davin⁸ reported a case in which the cause was obscure, in a patient who suffered from mild chronic asthma.

CASE REPORT

S.M., a Caucasian woman, age 57, was admitted to The Queen's Hospital on April 11, 1944, complaining of fever, weakness and a slight nonproductive cough.

Menopause had occurred at the age of 50. Two years later she began having stiffness of the small joints of the hands in the mornings, usually disappearing as the day progressed. Occasionally she noticed some stiffness of the shoulder joints. These symptoms subsided and recurred at various intervals.

She had also suffered from recurrent attacks of bronchial asthma for the past twenty-five years. These seizures ordinarily occurred four to five times a year and usually subsided in two weeks with symptomatic treatment only. During this time, only once was hospitalization required: on May 11, 1943, when she was admitted to The Queen's Hospital. During this admission her red blood count was 4,300,000 with 84.6 per cent hemoglobin. The white blood count was 9,500 with 65 per cent polys, 30 per cent lymphocytes, 4 per cent eosinophiles and 1 per cent basophiles.*

Her present illness began in March 1944, following a mild asthmatic attack. Her first symptoms were weakness, slight fever and malaise, and a dry, non-productive cough.

Physical examination at that time showed a middle-aged woman who appeared ill. Her temperature was 99.2, her

weight was 123 lbs., and her blood pressure was 160/100. Eye grounds showed some arteriolar change. Teeth were replaced by upper and lower dentures. Chest expansion was symmetric and there were a few crepitant rales heard at the left base. The remainder of the lung fields was clear. The heart was normal in size; the rhythm was regular and the rate was 84 per minute. There were no murmurs heard. The abdomen was normal. She complained of some stiffness in the small joints but no objective changes were evident. Her red blood count at that time showed 3,500,000 cells with 85 per cent hemoglobin. The white blood count was 17,000 with a differential count of 46 per cent polys, 25 per cent eosinophiles, 24 per cent lymphocytes, 3 per cent monocytes and 2 per cent basophiles. Her Vollmer tuberculin patch test was negative. A tuberculin test using .0005 mg. P.P.D. was negative. An undulant fever antigen test was negative. A urine specimen was normal. She was given iron by mouth and acetylsalicylic acid compound grains 10 every four hours and was advised to rest at home.

During the next two weeks she continued to run a low grade fever and began to have an occasional night sweat. Her temperature record at home showed a daily fluctuation from 98.8 F. in the morning to 100 F. in the afternoon. Her pulse rate fluctuated between 90 and 100 per minute. Since the onset of these symptoms she had been free of asthma. As the cause of this illness was obscure, she was admitted to the hospital for further study.

Physical examination on admission to the hospital showed a pale, sick appearing middle-aged woman. The rales in the left base were more marked and fluoroscopy at this time showed a definite infiltrated lesion at the left base. Pelvic and proctoscopic examinations were both normal.

Her blood count on admission showed 3,140,000 red blood cells with 10.3 grams of hemoglobin. White blood count was 13,200 with a differential of 46 per cent polys, 16 per cent lymphocytes and 38 per cent eosinophiles. Subsequent blood counts showed a gradual rise in the white blood cells to 22,000 per cubic mm. with a differential of 42 per cent polys, 7 per cent lymphocytes and 51 per cent eosinophiles. Toward the end of her illness the white blood count dropped to 12,600 with a differential of 70 per cent polys, 20 per cent lymphocytes and 10 per cent eosinophiles. Repeated urine analyses were normal. Specific gravity varied from 1.009 to 1.020. Kolmer, Wassermann and Kahn tests were negative. Fifteen sputum concentrates and three gastrolavages were negative for acid fast bacilli. Eight sputum cultures were negative for fungi or acid fast bacilli. Sedimentation rate was 30 mm. in 1 hour (corrected). Gastric analysis showed a maximum free hydrochloric acid level of 12 units, and a total gastric acidity of 25 units. Repeated blood cultures were negative. Eight stool examinations following a saline cathartic were negative for ova, parasites and amoebae.

Chest x-ray taken on admission showed a definite parenchymal infiltration associated with fibrosis with some displacement of the mediastinal structures to the left. The findings were consistent with a mycotic lesion at the left base. A series of x-rays made at seven- to fourteen-day intervals showed a definite resolution of some lesions with bilateral extension of others. As one lesion seemed to clear, other lesions appeared and as these regressed, new infiltrations appeared.

The patient remained in the hospital twelve weeks. During her stay she ran a septic temperature with daily excursions varying from 99.2 to 100.2 F. The dry cough occasionally produced small amounts of sputum. The joint symptoms would subside and flare up from time to time. There was no redness or swelling present at any time. The patient complained of weakness and exhaustion that seemed to be aggravated by the elevation of her temperature. She had no actual pain. During her stay she lost 15 lbs. The last week of her hospital stay her temperature returned to normal and she was discharged, improved, on June 30, 1944.

Sulfadiazine was tried in doses of 1 gm. every four hours for 5 doses, then 0.5 gm. every four hours with sodium bicarbonate grains 5 four times a day. A blood level of 9 mg. per cent was maintained for ten days without any noticeable effect.

Penicillin, 200,000 units in doses of 15,000 units intramuscularly every four hours, was tried, without any effect.

Repeated small transfusions of 250 cc. citrated matched blood were given over a period of eight weeks. These seemed to benefit the patient more than any other type of therapy. They were given when the patient's red blood count dropped below 4 million.

Deep x-ray therapy was tried over the left lung according to the following daily schedule with slight improvement:

AREA	KV. P.	MA	ADDED FILTER	MIN.	DIST.	DOSE	TTL.
L. thorax ant.	400	5	1.5 mm. Cu	5	70 cm.	100r	100r
			1.0 mm. Al.				
L. thorax post.	400	5	"	5	"	100	200
L. thorax ant.	400	5	"	5	"	100	300
L. thorax post.	400	5	"	5	"	100	400

Size of area (1 and 2) 20x18 cm.

A week after discharge from the hospital the patient remained afebrile and began to gain weight. During the next three months her strength gradually returned. When last seen on November 21, 1944 her weight was 122 lbs. Tuberculin tests using .0005 and .005 mg. P.P.D. were still negative. Undulant fever vaccine test was negative. The antigen tests for trichiniasis and ascaris were both negative.

Since her recovery she has been free from asthma.

DISCUSSION

The essential features of this case followed closely the pattern of the cases described by Loeffler².

This patient had definite transient pulmonary infiltrations (Figs. A and B) and the eosinophile count was high (Table 1). The constitutional symptoms were minimal. The annoying features were the fever,

TABLE 1. Hemogram, April to October.

DATE	R.B.C.	Hb. GMS.	W.B.C.	POLYS.	LYMPHS.	TONINS.	MONOS.
4/12	4.0	9.1	20,200	39	8	51	
4/15	3.7	9.7	22,900	39	9	51	
4/20	3.3	9.7	21,300	50	13	36	1
5/1	4.2	12.4	17,800	47	17	34	2
5/15	4.8	12.6	14,200	44	19	37	
5/29	4.7	10.6	12,200	68	13	19	
6/6	4.5	11.4	17,600	55	15	29	1
6/27	5.0	12.4	19,700	43	24	29	4
10/24	5.1	13.3	12,000	56	31	10	3

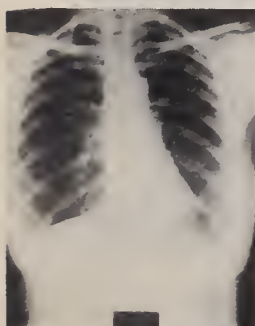


Fig. 1. 5-12-43

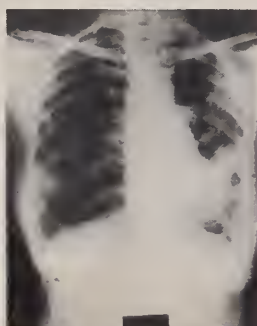


Fig. 2. 4-13-44

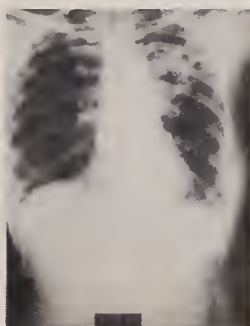


Fig. 5. 5-23-44

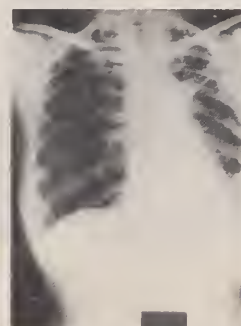


Fig. 6. 6-12-44

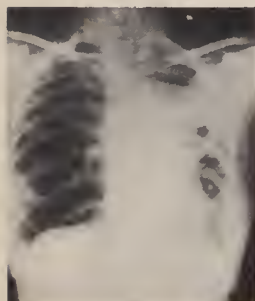


Fig. 3. 4-22-44



Fig. 4. 4-29-44

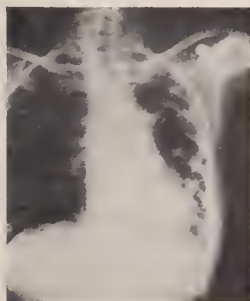


Fig. 7. 6-23-44



Fig. 8. 10-24-44

A. Fig. 1 was made during a previous admission to the hospital for bronchial asthma. Figs. 2, 3, and 4 are serial x-rays showing transient pulmonary infiltrations.

B. Figs. 5, 6 and 7 are a continuation of the serial x-rays. Fig. 8 shows a complete resolution of the lesions and appears about the same as Fig. 1.

the night sweats, and the persistent, almost non-productive cough. The similarity between the pulmonary infiltrations (Fig. 4) and those seen in pulmonary tuberculosis was quite striking.

It is understandable how a parasitic infestation such as hookworm or *Ascaris lumbricoides* could produce such a picture, since during the life cycle of these parasites pulmonary invasion takes place. On Guam, before the war, such pulmonary x-ray findings were not unusual in patients with a heavy *Ascaris lumbricoides* infestation.

In this case no cause for the illness was found.

CONCLUSION

A case of transient pulmonary infiltrations with eosinophilia is reported.

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I am indebted to Dr. Hastings Walker for his assistance in the conduct of this case.





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M E R C K contributions

1934—Ascorbic Acid Merck was made available by Merck & Co., Inc.

1936—Crystalline Vitamin B₁ was synthesized in the Merck Research Laboratories.

1937—Vitamin B₁ (Thiamine Hydrochloride Merck) was made commercially available.

1938—Nicotinic Acid Merck (Niacin) and Nicotinamide Merck (Niacinamide) were made available.

1938—Riboflavin Merck was the second pure crystalline vitamin to reach production during that year.

1938—Alpha-Tocopherol (Vitamin E) was identified and synthesized by Merck chemists and their collaborators in other laboratories.

1939—Crystalline Vitamin B₆ was synthesized in the Merck Research Laboratories.

1940—Vitamin B₆ Hydrochloride Merck (Pyridoxine Hydrochloride) became available.

1940—Alpha-Tocopherol Merck (Vitamin E) was made commercially available.

1940—Vitamin K₁ Merck (2-Methyl-3-Phytyl-1, 4-Naphthoquinone) was made available.

1940—Menadione Merck (2-Methyl-1, 4-Naphthoquinone), a pure compound having marked Vitamin K activity, became available.

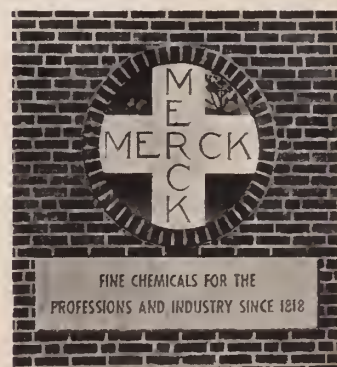
1940—Crystalline Pantothenic Acid, member of the Vitamin B Complex, was identified and synthesized by Merck chemists and their collaborators in other laboratories.

1940—The Calcium Salt of Dextrorotatory Pantothenic Acid was made available by Merck & Co., Inc.

1943—Crystalline Biotin, member of the Vitamin B-Complex, was synthesized in the Merck Research Laboratories.

1944—Biotin Merck was made available by Merck & Co., Inc.

Merck & Co., Inc. now manufactures all the vitamins commercially available in pure form, with the exception of vitamins A and D.



HAWAII MEDICAL JOURNAL

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EDITORIALS

PRESIDENT EMERITUS ARTHUR GORDON HODGINS, M.D.*

RESOLUTION

WHEREAS, one of our most respected colleagues has been in the active practice of medicine in the Territory of Hawaii since July first, 1899, and

WHEREAS, throughout all of these years he has lived a life of devotion to the practice of medicine, and

WHEREAS, his services to the sick public have over the years been given unstintingly, unselfishly and graciously, oftentimes at the expense of his physical well-being, and

WHEREAS, the original Hawaiian Medical Society had the benefit of his leadership and guidance as President of the Society in the year 1907, and

WHEREAS, the Hawaii Territorial Medical Association enjoyed his leadership as President in the year 1928-1929, and also had the benefit of his counsel and advice in numerous capacities as a member of many committees, and

WHEREAS, by his good works, his exemplary character and his high ideals, not only as a doctor of medicine but as a man and a citizen of this community, he has earned the title and the right to be known amongst us as one of our foremost leaders in the community and of medicine, and

WHEREAS, social and professional contact with him has created complete confidence, trust and friendship by the younger and older members of the profession as a whole,

NOW THEREFORE BE IT RESOLVED, that the Hawaii Territorial Medical Association, at this fifty-fifth annual meeting assembled, hereby honor him by a unanimous rising vote with the title of *President Emeritus*, and

BE IT FURTHER RESOLVED, that a copy of this resolution be spread upon the minutes of this meeting and the same printed in our regular bi-monthly JOURNAL, and

BE IT FURTHER RESOLVED, that a copy of this resolution be immediately delivered to Doctor Arthur Gordon Hodgins by an appropriate representative or committee appointed by the President of the Hawaii Territorial Medical Association.

FORREST J. PINKERTON, M.D.

May 4, 1945.

* Dr. Hodgins died of multiple myeloma, July 7, 1945.

A LETTER FROM SENATOR WAGNER . . .

TO THE EDITOR:

On Thursday, May 24, I introduced with Senator Murray a bill, S. 1050, entitled: "The Social Security Amendments of 1945." The bill provides for "the national security, health and public welfare." Representative Dingell of Michigan introduced a companion bill (H.R. 3293) in the House at the same time.

I am forwarding the bill itself, and a copy of my speech in the Senate for your information and use.

I particularly invite your earnest study of the provisions of the bill relating to health. There is absolutely no intention on the part of the authors to "socialize" medicine, nor does the bill do so. We are opposed to socialized medicine or to State medicine. The health insurance provisions of the bill are intended to provide a method of paying medical costs in advance and in small convenient amounts.

During the formulation of this bill, we have benefited greatly from the constructive advice and suggestions of practicing physicians, and of physicians in clinical and teaching positions. Their constructive suggestions have resulted in changes in the bill which we presented in the last Congress. Undoubtedly other changes will be made before this bill is enacted into law. We wish to have it known that we invite constructive suggestions from the medical profession.

In addition, members of the medical profession will be given full opportunity to voice their opinions in open hearings when the bill is considered in Committee.

I hope that you will print this letter in your Journal and that you will join me in urging the medical profession to undertake an earnest study of the actual provisions of the bill. In this way you can help immeasurably in avoiding misunderstanding and misinterpretation of the legislation and in stimulating physicians and medical and hospital organizations to come forward with constructive suggestions and advice.

Sincerely yours,

(S.) ROBERT F. WAGNER

May 31, 1945.

. . . AND A REPLY

SENATOR WAGNER:

We have received your letter, reprinted above, asking us to study the provisions of your bill entitled "The Social Security Amendments of 1945." We have done so. We have read your statement upon introduction of the bill. We have read the report

of the Lawyers' Guild's National Committee on Social Legislation. And we still think that the practice of medicine under the terms of your bill offers a most unattractive prospect.

You say that there is in your bill "absolutely no intention . . . to 'socialize' medicine." You say that "health insurance is *simply*" (the italics are ours) "a method of paying medical costs in advance." These statements appear to be camouflage for the inescapable, fundamental fact that your bill provides for the insertion of a Federal bureau between the patient and the doctor. What we have seen of Federal bureaus and their method of operation makes this outlook anything but alluring.

You say that there is a place in your bill for currently existing medical prepayment plans. We doubt it. It seems obvious that your plan would overlap them completely, and that nearly everyone, being compelled by law to subscribe to your plan, would be compelled by financial stringency to abandon whatever private plan he belonged to.

You say that under your plan physicians are given the right "to select the method" of their remuneration. But you restrict their choice to three almost equally unattractive alternatives: a salary (which will interest few competent physicians), a fee schedule (which in the very nature of things cannot possibly be satisfactory, and which is sure to defraud the innocent and enrich the unscrupulous practitioner), or a "panel" system (which is known as an abomination by virtually every physician who has been compelled to practice under it).

There is a relatively small group of physicians who do not object to working for a fixed honorarium; this group consists largely of medical missionaries, teachers, research workers, military doctors, and specialists in tuberculosis, mental disorders, and other institutional fields. These men will find little that is objectionable in your plan, at least from their own personal point of view. Most American physicians, however, have taken up the practice of medicine partly because they love the work and partly because it is a relatively free and untrammelled way of earning a living. It permits them to set their own hours and their own fees, to work as much or as little as they like, and to regulate all their affairs as they see fit; to enjoy, in short, all of the benefits and privileges of a profession as opposed to a trade. Your bill would seriously interfere with this way of life for all but the most capable and popular specialists: the average practitioner would be forced to enter into your plan in order to make a living. What will be the ultimate effect of this on the caliber of man who chooses medicine as a life's work? It seems safe to predict that it will not improve it appreciably. The penalty for such a decrease will not be paid by the medical profession. It will be paid by the people, in terms of a poorer quality of medical care.

Rome was not built in a day, nor in a decade. Our own medical prepayment plans are infants yet, but they are born, and they are growing. Give them a chance to show what they can do. Give us a chance to solve this problem—*our* problem—in our own way. Delete the medical care provisions from your bill!

WANTED

DEAD OR ALIVE

... but preferably very much alive, from the eyebrows up—and down. . . .

An Assistant Physician for Kalaupapa, Molokai, T. H.

By choice, he should be a young man unavailable for military service, from a good medical school and a good internship. He must be a real doctor at heart. He must have almost as much of the milk of human kindness flowing in his veins, as of blood plasma. He should have a loving wife, who is a sociable person—for Kalaupapa is off the beaten path. There should however be no children; Kalaupapa is perfectly safe for adults but it is not yet perfectly safe for children.

He should have quite a bit of the medical missionary in his make-up, but he must not be ostentatiously religious. If he has had training, or has an interest, in diseases of the skin, so much the better; for here he will get advanced training, and opportunity to observe.

His duties will be arduous: those of a general practitioner, with several specialties superimposed—dermatology, otolaryngology (tracheotomies are fairly frequent), and, if he knew the rudiments of pathology and clinical pathology, he might make an everlasting name for himself.

And what does the Territory of Hawaii offer such a paragon of virtues for his services in this distant place? Very, very little, measured by the yardstick of stay-at-homes in these war days. One priceless boon it does offer is an opportunity to work and be useful in a place that has been made forever famous by the service and martyrdom of Father Damien de Veuster. Father Damien's rags have been replaced by aseptic dressings now; there is a modern operating room, and even a laboratory with an electric photocolormeter and a technician to operate it. But the basic work done by Father Damien needs doing yet.

There is a comfortable cottage, and plenty of good food; Kalaupapa raises much of its own beef. There is a chief resident physician, a man who is altogether a good doctor, a good leprologist, a good dermatologist, and, above all, a good man.

The salary is pitifully small—\$450.00 and keep—as measured by present standards—but might be attractive in the crumbling days to come.

Fishing and hunting are mentioned only in passing; the scenery makes the Riviera pale and pallid.

His greatest reward would be not in minted gold, but in the gratitude of the three hundred and fifty-odd patients to whom he would help minister. The atmosphere of many tuberculosis sanatoria is one of resignation and quiet; the atmosphere of this leprosy sanatorium is one of smiling, hopeful friendliness, typified by the ever-spoken Hawaiian greeting, "Aloha."

Kalaupapa needs a doctor badly. Which of you doctors has blood and guts enough to volunteer for the job? You may some day win a star—or three—or even a halo. Speak up!

P.S.: Mr. H. A. Kluegel, Superintendent of Hospitals and Settlement, Territorial Office Building, Honolulu, Hawaii, will be happy to receive your application.

E. A. FENNEL, M.D.

PREMARITAL EXAMINATIONS

The recent Hawaii Legislature passed a praiseworthy piece of legislation in H. B. No. 511, "An Act . . . Requiring, Subject to Certain Exceptions, a Premarital Examination." Everyone agrees that persons suffering from venereal disease in a communicable stage should not get married until steps have been taken to prevent the transmission of such disease. Everyone agrees that the average person cannot be expected to take proper steps to do this of his or her own volition: legal compulsion is the only means of making sure such an examination is performed on everyone before a marriage license is issued. Everyone agrees that a progressive State should have such a law in order to help its citizens rid themselves of gonorrhea and syphilis in particular—to say nothing of the many other untoward conditions that might be discovered in the course of such an examination. Even the Hawaii Legislature finally, in this year 1945, came around to this way of thinking and passed an appropriate Act providing for such examinations.

But someone introduced a final paragraph, paragraph (i). It reads as follows: "All costs of examinations, tests and statements required by this Act shall be paid by the Board of Health from any moneys that may be appropriated for the expenses of said Board."

With roughly 5,000 marriages annually in the Territory, and an estimated five dollar fee for an adequate premarital examination including a serologic test for syphilis, this would cost the Board of Health about \$50,000 a year—a prohibitive figure. Whether the purpose of this was to sabotage the Act entirely by compelling its veto, or whether protection of the

poor was the motive, only the introducer of the fatal paragraph can say. What is to be done now is the sixty-four dollar question. If the Board of Health can figure out some way to permit the Territory to profit by the wise provisions of the Act, despite the seemingly insurmountable obstacle of the expense entailed by paragraph (i), it will earn the heartfelt thanks of everyone who has the public interest at heart.

Perhaps the best solution would be for the Board of Health to offer, free, the perfunctory examination required by the letter of the law, and for the private physician to offer, at a reasonable office fee, an adequate premarital examination. Nearly everyone will probably prefer the latter—and the problem will thereby be solved, at least until another legislature can delete the unfortunate paragraph.

DON'T APPLY SULFONAMIDES TO THE SKIN!

Sulfathiazole powder and sulfathiazole ointment, and probably also the other sulfonamides, should not be applied to the skin unless there is a definite contraindication to every substitute for them. Their use entails a serious risk of sensitization, with the production of a stubborn eczematous dermatitis which may be either localized or generalized and which is likely to be "recalled" by every subsequent exhibition of the drug either internally or topically.

This has been so thoroughly established that its occurrence is no longer regarded as worth reporting in the literature; yet many physicians and nurses continue to dust abrasions with the powder and treat all sorts of skin lesions with the ointment, daily. A recent article in *News Week* told of the treatment of dermatitis venenata in the Southwest Pacific area with "gentian violet and sulfathiazole ointment"!

It has repeatedly been suggested that five days' use of the sulfathiazole preparations on the skin is comparatively safe, and it appears to be true that most persons require six or more days' exposure to it before sensitization occurs. In many instances, however, this may merely mean that sensitization does develop but the allergen is discontinued in time to prevent the reaction from occurring. The next exposure to the drug may be the one that first produces dermatitis.

It is indefensible to wantonly and unnecessarily make it impossible to ever again give a patient a drug which might be life-saving under certain circum-

stances; and that is precisely the risk incurred by the external application of sulfonamides. Be sure that your next such use of these drugs—if any—is *really* necessary.

APPROVAL FOR PUBLICATION OF ARTICLES BY ARMY MEDICAL DEPARTMENT PERSONNEL

We recently advised Army officers wishing to submit articles for publication in the *HAWAII MEDICAL JOURNAL* that such articles could be approved either locally or in Washington. We were in error.

Circular Letter No. 192, published November 20, 1943, described in detail the requirements relative to the publication of articles by Medical Department personnel. The first requirement of all is submission of the article "through channels to the Surgeon General's Office."

The letter contains detailed instructions for the preparation of such papers; many of these would make most useful reading for would-be medical authors, and would if followed carefully lighten the load of editors considerably. Contributors are urged to obtain a copy of this excellent little document and keep it handy while they prepare the final draft of their contribution.

Naval officers' contributions may still be approved locally for publication.

POSTWAR JOBS IN MEDICAL OCCUPATIONS

Students, teachers, parents and others interested in medical occupations will find helpful information in three new six-page Occupational Abstracts on *Medicine*, *Nursing*, and *Medical Laboratory Technologist*, just published by Occupational Index, Inc., New York University, New York 3, N. Y. at 25c each, or 75c for the three.

Each abstract covers the nature of the work, abilities and preparation required, entrance and advancement, earnings, number and distribution of workers, postwar prospects, advantages and disadvantages and sources of further information, including a select bibliography of the five best references.

CIVILIAN HOSPITAL NEEDS

TERRITORIAL INSURANCE AGAINST THE COST OF HOSPITAL CARE

The need for hospital care is unpredictable. Since it comes with serious illness it adds to the cost of medical care, and frequently is further accompanied by loss of income during the illness of the wage earner. Hospital services are increasing in cost because of necessarily greater operating costs generally and because of Hawaii's objective to keep abreast of advancing medical science and hospital standards.

The burden of cost falls most heavily on the middle and low income families—not the poor, who receive free hospitalization; nor families with high incomes, because they can afford to pay the cost—but the middle and low income people who do without or postpone needed hospital care, or secure it through a combination of exhaustion of savings and current deprivation, or through loans and further deprivation in the future.

The problem is to spread the risk and the liability—in short, to provide insurance; to make the availability of hospital services the responsibility of the people of Hawaii rather than the financial misfortune of the one out of four or five families a year needing service.

The Need for Insurance

Medical and hospital authorities agree that there is great need for insurance against the kind of catastrophic illness that hospitalization involves.

Voluntary hospital insurance is increasingly worthwhile but is effective only to the degree that coverage is achieved. Across the country the Blue Cross plan, and in Hawaii the Hawaii Medical Service Association (including hospitalization), have yet to include the bulk of the people most needing insurance. The Territorial insurance proposed below will coordinate with voluntary insurance by providing such insurance an opportunity to cover the cost of the remaining charges to the patient. With a part of the burden covered by Territorial insurance the voluntary insurance can also expand the scope of services provided.

The providing of hospitalization is as essential as the providing of police and fire protection. Every person in the community wants these services available when he needs them. Most citizens seldom, if ever, call upon the police or fire departments, but they support them as public services so that they will be available when needed. However, unlike the police and

fire departments, the hospitals are traditionally maintained and supported entirely by the persons unfortunate enough to become seriously ill. On this basis these persons pay not only the costs of their own illnesses, but also the costs of maintaining a sufficient number of available beds so that service will be available when needed—in other words, the "standby costs."

A certain number of beds must be available in each community in order that its needs may be served in a hospital sufficiently staffed and equipped to provide the standard services. Normally, of course, a hospital is never empty, but on the other hand, it should never be full, since at least 20 per cent of the beds should be held in readiness for epidemics or other emergencies. On an average, it appears that seventy-five per cent of the total costs per patient day represents the "standby costs," which are incurred and must be borne by a hospital, whether or not a single patient is hospitalized. It is the standby costs which it is felt are properly a burden to be assumed by the community rather than by the persons who from time to time happen to require hospitalization.

Lump sum cash grants-in-aid, now enjoyed by two hospitals through Territorial legislation, are not favored as a solution to high costs of hospitalization. Both lack of control and inequitable assistance to the entire population might be the result of such a policy.

General Provisions Outlined

It is proposed:

- 1) That the Territory provide insurance against the "standby" or "ready to serve" costs per bed in the maintenance of the necessary number of beds in each community throughout the Territory;
- 2) That coverage include at their option all non-profit hospitals that offer general hospital service; except hospitals operated by the United States Government and the Territory offering special custodial service such as tuberculosis and mental illness;
- 3) That administration of the insurance be the responsibility of the Territorial Board of Health, with continued administration of the hospitals under present auspices:

To establish under the Board of Health a Division of Hospital insurance which shall be

responsible for the administration of this act, to be headed by a director.

- 4) That inclusion of each hospital in the plan be through formal application to the Board of Health setting forth the basis for its participation in the insurance benefits; certification by the Board of Health to the Territorial Treasurer of quarterly (or monthly) claims for reimbursement of the cost of "standby" service shall be conditional upon initial and continuing approval by the Board, of the terms set forth in the application, and finding by the Board during continuing operation that such operations are in substantial compliance with the approved application.

Such application must:

- a) provide for such methods of administration, standards of service, and conditions for admission of patients, as are found by the Board of Health to be necessary for the efficient administration of hospital services in safeguarding the health of the people of Hawaii;
- b) provide for insurance payments to include reimbursement for such objects of expenditure (*exclusive of capital expenditures*) as are found by the Board to be necessary to maintain the number of "standby" or "ready to serve" beds needed in each community in the Territory;
- c) provide for the establishment of such record system, and the maintenance of such records, which shall be open to inspection of the Board of Health, as are found by the Board to be necessary for the efficient administration of this insurance;
- d) provide that the hospital will submit such reports in such form and containing such information, as the Board may from time to time require, and to comply with such provisions as the Board may from time to time find necessary to assure correctness in the verification of such reports;
- e) provide, after first deducting the standby cost provided by insurance, that charges to individual patients be determined on a sliding scale related to the type of accommodations and other services as furnished; such scale further shall be found by the Board to be reasonably related to estimated total annual operating income (including insurance and charges to patients) as will approximate total operating costs exclusive of capital expenditures;
- f) provide that insurance be payable for maintenance of beds occupied by patients who are residents of the Territory of Hawaii and not eligible to receive hospital care through payment by U. S. Government agency or instrumentality thereof.

Data on Which Insurance Plan Is Based

A rough estimate of the standby charges represents about 75 per cent of the total cost per patient-day. At the present time the highest minimum ward day rate in any general hospital is about \$6.00 per day. On a sliding scale basis with standby charges paid by the Territory, ward-bed care might be made available for as little as \$1.00 per day out-of-pocket cost to each individual patient. This would rise in proportion to the type of accommodation desired to an estimated \$6.00 per day. The average of all hospital direct charges to patients would thereby meet the deficit of operating costs over standby charges.

The latest available figures indicate the various counties in the Territory of Hawaii have available the following total hospital beds that might be incorporated into this plan:

HOSPITAL BEDS	
Oahu	1019
Hawaii	375
Maui (including Molokai and Lanai)	556
Kauai	167
Total	2117

Exact costs per patient-day to cover all of the available beds in the Territory for the year 1944 are not presently known, but 75 per cent standby charges to be paid by the Territory of the *estimated* costs for the maintenance of all of these beds, would approximate \$3,750,000 per annum. It is further estimated that some 77,000 individuals were treated as in-patients during the year 1944. On the law of averages it would appear that every resident of the Territory might expect to be a patient in a hospital on the average of once every 5 or 6 years.

Under this new plan, admission to and discharge from any hospital in the Territory would still be under the control of a licensed physician. This would preclude the flooding of hospitals with individuals seeking to use these facilities for domiciliary purposes. The availability of hospital beds at a very reasonable out-of-pocket cost to the average patient is most desirable from the standpoint of the general public health of the Territory.

With the control of the required number of beds at established standby charges in the hands of the Board of Health, equitable hospital facilities could then be assured for all population areas in the Territory.

Summary

To summarize, this plan provides for public insurance, contributed by the residents of Hawaii, designed to carry the basic costs of maintaining adequate hospital beds and facilities; each resident, when hospitalized, would be required to pay only those costs

for personal services actually incurred in excess of the amounts covered by the insurance payments.

In operation, the various interested parties would function as follows:

1. *The Territorial Board of Health* would

- a) determine number of beds and facilities to be maintained by each member hospital.
- b) determine the amount and make payments to each hospital for basic cost or "standby" charges.

2. *The member hospital* would

- a) continue to operate with existing staffs and Boards of Directors.
- b) charge each in-patient, on a sliding scale basis, ranging from minimum ward care to private room service, with the balance of the

cost of operation not provided by the insurance.

3. *Resident of Hawaii* would

- a) gain admission to and discharge from a hospital by referral of his private physician as at present.
- b) have the use and choice of any member hospital in the Territory at an out of pocket cost within the means of the patient.
- c) be assured of adequate hospital facilities in all areas of the Territory, in proportion to the population needs.
- d) enjoy better public health standards through the ability, both physical and financial, to more generally use hospitals for the prompt treatment of the sick and injured.

CHAS. F. HONEYWELL



NEUROPSYCHIATRIC COMMENT

THE SHOCK THERAPIES

In the centennial anniversary issue of the *American Journal of Psychiatry*, Dr. Abraham Myerson predicted that "when the history of psychiatry is written for the one hundred fiftieth anniversary of the American Psychiatric Association, the end of the era of therapeutic defeatism will be found to date from the time of the introduction of the shock treatments, and the advent of these queer and rather barbaric additions to the 'gentle' art of healing will mark the beginning of a real and much better therapeutics, which will in its turn lead to a new and better classification and a completer understanding." Such enthusiasm compels our attention and further study.

History

The use of violent medicines in the direct attack upon the psychoses is no novelty. The medieval prescription of "githrife, cynoglossum, yarrow and lupon to be drunk by the fiend-sick man out of a church bell" was succeeded in the twenties of this century by Dr. Lowenhart's use of cyanide with improvement in some cases. Dr. Sakel came upon insulin in the relief of morphine addiction withdrawal symptoms and extended its use in the alleviation of functional mental disorders in 1930. Meduna instituted metrazol therapy in 1933, based on his apparently erroneous assumption of an antagonism between the schizophrenic process and epilepsy. Before accepting metrazol he had tried camphor. Cerletti and Bini devised the electroshock in 1938 as a more satisfactory way to produce a convulsion, after extensive animal experimentation.

Mechanism of Action

The only common denominator of all three shock therapies is unconsciousness. In insulin shock this is part of a progressive depression on the neuraxis from the cerebral hemispheres to the brain stem by starvation induced by prolonged hypoglycemia. With metrazol and electroshock the unconsciousness represents exhaustion of the motor cortex after chemical or electrical stimulation.

The healing mechanisms of shock therapy have been analyzed by Moriarty and Weil under three headings. (1) Physiologically, shock seems to stabilize the central nervous regulatory centers, especially the hypothalamus. "Concomitantly, there occurs reestablishment of inhibited reflex responses, with

the disappearance of such symptoms as insomnia, tension and depression." (2) From a psychobiologic angle, the patient is subconsciously brought to a "low level fear" where the patient summons all his courage to fight for the life which seems to be threatened. This release of self-confidence operates toward the patient's improvement. (3) Freud has described psychosis as a regression of the adult back into his ego-shell, where all energy and attention is applied to self. Psychologically, shock seems to break this self-fixation to liberate the patient's energy for social living.

Technique

Insulin therapy is expensive in time and personnel. Ordinarily twenty to forty deep comas are advocated, each one of which requires full attendance, by a nurse and a doctor experienced in this technique, for at least five hours. The comas are induced daily, six days a week, the coma dose varying from 50 to 400 units of plain insulin.

Convulsive shocks are usually given two or three times a week for as long a time as the attending psychiatrist may think necessary. For some psychotic patients daily and even thrice-daily shocks have been recommended. There is no contraindication to repeated series of convulsive shocks with relapse of the disease process.

Indications

Undoubtedly the affective disorders, that is, the involuntary melancholias, the agitated depressions, the reactive and autogenous depressions and the manic attacks have shown the best results with convulsive shock treatment. Illnesses of this kind have been shortened by two-thirds or more. Affective disorders do not respond to insulin treatment. Schizophrenia is characterized by remissions and relapses; schizophrenic episodes seem to be aborted with electroshock.

A recent comprehensive study by the Temporary Commission in State Hospital Problems (New York) comparing 1100 schizophrenic patients who received insulin with 875 who had only supportive care found that the insulin patients were able to leave the hospital sooner, they returned in fewer numbers and later, and there was a consistently larger proportion of insulin treated patients in the higher levels of usefulness in contrast with the non-treated patients. In consideration of the risk and expense, many psychiatrists advise a trial with electric shock before un-

dertaking the more dangerous and costly insulin therapy.

Some psychoneuroses are amenable to shock treatment. Organic and toxic-delirious psychoses do not improve with shock. Nor is shock indicated for mental deficiency. When a psychopathic disorder is colored with functional features like depression, tension or schizoid characteristics, these undesirable features may be erased with shock. Usually paranoid conditions are improved with insulin.

Contraindications

Tuberculosis, advanced arteriosclerosis, coronary disease, congestive heart failure from whatever cause, advanced age, malignancy, pregnancy and organic brain damage have been the principal contraindications to the use of shock therapy. In any particular patient, however, it is well for the internist and psychiatrist to assess together the somatic and mental dysfunction, and determine the advisability of shock in terms of the total person. Recently, for example, we saw a patient with severe involutional melancholia and rheumatic mitral stenosis with occasional cardiac failure return to her family enormously improved mentally after two electroshocks.

Complications

Complications of insulin therapy are prolonged coma, pneumonia and cardiac failure. These are responsible for the death of one patient in five hundred in large series. In convulsive shock, fractures and dislocations, activation of quiescent tuberculosis, circulatory collapse and memory defects are to be

mentioned. These memory defects sometimes take three or four weeks to disappear, even in patients who are otherwise well.

The introduction of curare to soften the somatic manifestation of the convulsion has decreased the number of fractures appreciably in roentgenologically compared series, but adds a new danger by its own threat to respiratory function.

Many have been concerned about permanent brain damage resulting from convulsive shock. It is reassuring to know, therefore, that morphologically demonstrable changes in the brain tissues of experimental animals could be produced by Alexander and Lowenbach only with shocks which in amperage, duration of flow and density of current far exceeded those used in electroshock in man.

Conclusion

Three relatively new tools have been added to the psychiatrist's armamentarium: insulin, metrazol and electroshock. Metrazol is giving way almost completely to electric shock on account of the higher incidence of fractures with metrazol and the practical convenience of electroshock. Their exact mode of action remains a mystery but their effectiveness in dissipating and destroying the psychotic process in selected patients is an observable certainty. Like all weapons in medicine, they can be no more useful than the competence of the specialists who employ them, and psychotherapy continues to be an essential adjunct to their full ameliorative value.

E. J. HORNICK, M.D.



COUNTY SOCIETY REPORTS

HONOLULU COUNTY MEDICAL SOCIETY

Regular meeting held Friday, March 2, 1945 in the Mabel Smyth Auditorium.

The program was entitled "Symposium on Objectives and Functions of the Health Department," and was presented by Charles L. Wilbar, M.D., B. J. McMorrow, James R. Enright, M.D., Robert H. Marks, M.D., Samuel D. Allison, M.D., Edward Y. Z. Chong, Pauline Stitt, M.D., William Shanahan, M.D., Laura Draper, Elmer J. Anderson and Richard K. C. Lee, M.D.

In the absence of Dr. Enright, Dr. Wilbar read the paper prepared by Dr. Enright previously for presentation. In the absence of Dr. Wishik, Dr. Stitt spoke on the Bureau of Crippled Children.

Dr. Halford read an article taken from a newspaper printed on the mainland. It was written by a chiropractor who had visited Kalaupapa, Molokai. He had given his ideas on the causes of leprosy, and criticised some of the work being done.

Dr. Fennel announced that there is a movement afoot to make hospital insurance mandatory. He felt that if the bill were passed all members of the community would profit by it. The bill calls for money to be taken from the Territorial treasury to pay for part of the hospital bills contracted by a patient, regardless of his financial status. He pointed out that this did not include indigents.

Dr. Fennel announced that Kauai has adopted the Honolulu County Medical Society Industrial Accident Fee Schedule, and that Maui and Hawaii are about to do so.

Dr. Pinkerton introduced Dr. Nebelung who was released from the Navy to work with the Public Health Committee of the Chamber of Commerce.

M. GORDON, M.D.,
Recording Secretary

KAUAI COUNTY MEDICAL SOCIETY

The regular meeting of the Kauai County Medical Society was held on April 11, 1945 at the Wilcox Hospital at 7:30 P.M.

Members present were Drs. Umaki, Kuhns, Boyden, Hata, Harris, Liu and Wallis.

The reports of the Legislation Committee, concerning two recent House bills, were read. Dr. Kuhns moved that the Legislation Committee's reports be sent to all members of the Kauai Legislature; seconded by Dr. Hata and passed.

Dr. Boyden moved that all recommendations rendered by the Legislation Committee be sent to the president and secretary, and with their approvals to be sent directly to the Legislators; seconded by Dr. Liu and passed.

Dr. Wilbar's letter concerning the charging of fees at the Board of Health clinics was read. It was felt that his letter explained the situation satisfactorily.

Dr. Pinkerton's letter concerning disposition of plasma on hand was read. An informal discussion followed and Dr. Wallis moved that the plasma be offered to the Honolulu Blood Bank for whatever use they may have for it. This was seconded by Dr. Kuhns, who further agreed to speak to Dr. Pinkerton concerning the proposal.

There followed a discussion of proposals which would come up at the annual meeting on May 3.

Opinions of the Society were as follows:

HMSA—agreed.

Workmen's Compensation Fee Schedule—agreed.

Terr. insurance against cost of hospital care—desired additional information.

Convalescent nursing home—agreed.

Three-year residence clause—against.

One-year residence clause with abrogation 6 months after the war—Dr. Boyden moved that we go on record as approving this proposal; seconded and passed.

Change of charter and by-laws, to elect the president and president elect and to elect secretary and treasurer for 3-year terms—agreed.

For members in the service—Recognition Committee—agreed.

During the above discussions Dr. Umaki outlined several salient points to be considered by the Committee for the Convalescent Home.

There was an informal approval of members present for combining the County Medical Society and the Wilcox Memorial Hospital staff for scientific meetings. There was also informal approval that traveling expenses for outside speakers were to be taken out of the County Society funds.

Dr. Umaki read the new list of committees and their members. It was decided that the Committee on Fee Schedules would give an early report on fees for private patients.

There was informal approval of having Dr. Pinkerton delegate to the AMA again this year.

A motion was made by Dr. Liu that the Society approve of the setup whereby the president of the Territorial Society should be a resident of Honolulu, this to be in effect for the duration; seconded by Dr. Boyden and passed.

H. W. HARRIS, M.D.,
Secretary-Treasurer

MAUI COUNTY MEDICAL SOCIETY

Regular meeting held March 13, 1945, at the Wailuku Hotel. Members present were Drs. Shimokawa, Patterson, K. Izumi, Balfour, Kanda, Osmer, Dunn, McArthur, von Asch (presiding), and Sanders. Lt. MacInturff and Lt. Storts were guests.

Dr. von Asch announced the appointment of the following committees for the coming year:

Program

Patterson, Chairman
McArthur
Balfour

Forms of Medical Practice

K. Izumi, Chairman
Osmer
Dunn

Public Health, Legislation

Balfour, Chairman
Osmer
Tompkins

Library

Kanda, Chairman
Patterson
Balfour

Society

McArthur, Chairman
K. Izumi
Sanders

Board of Governors

McArthur
K. Izumi
Patterson

Dr. Homer Izumi has resigned from the Maui County Society and is transferring to the Honolulu County Society.

The Maui Community Council plan was presented, as to aims and principles, by Dr. Patterson. After some discussion, it was agreed that the Maui County Medical Society join the Maui Community Council, and that they be represented on the Council by the incumbent president each year. Copies of the set-up and plan of the Council will be sent to the members as soon as they are available.

Dr. Francis Chu, of Pukoo, Molokai, was admitted to membership in the Maui County Society.

There was some discussion of the expert testimony problem as seen in the Maui courts. The present status, and legislative trends, are to be reported upon by Dr. Balfour.

The regular monthly meeting was held April 8, 1945, at the Wailuku Hotel, at noon. Present were Drs. George von Asch (presiding), K. Izumi, St. Sure, Jr., Balfour, Kanda, Patterson, Rothrock and Sanders.

Dr. R. J. McArthur was elected delegate to the Territorial Meeting in May 1945.

Dr. Harry L. Arnold, Jr., of Honolulu, discussed a new concept of an old disease complex, newly termed "pompholyx."

JOHN SANDERS, M.D.,
Secretary



LIBRARY NOTES

THE HONOLULU COUNTY MEDICAL LIBRARY

MRS. ETHEL HILL, Librarian

MISS DORIS T. YASUTAKE, Library Assistant

8:00 A.M.—4:30 P.M. Phone 65370 7:30 P.M.—9:30 P.M.

RECENT ACQUISITIONS

By Purchase:

- Criep, L. H.: *Essentials of allergy*. c1945.
- Hamblen, E. C.: *Endocrinology of woman*. c1945.
- Hawk, P. B.: *Practical physiological chemistry*. c1937.
- Haymaker, Webb: *Peripheral nerve injuries*. c1945.
- Hodges, F. J.: *The gastro-intestinal tract*. c1944.
- Kerr, H. D.: *The urinary tract, a handbook of roentgen diagnosis*. c1944.
- Mackie, Col. T. T.: *Manual of tropical medicine*. c1945.
- Page, I. H.: *Arterial hypertension*. c1945.
- Pancoast, H. K.: *The head and neck in roentgen diagnosis*. c1940.
- Pillsbury, D. A.: *Manual of dermatology*. c1942.
- Revised laws of Hawaii*, 1945.
- Rosenau, M. J.: *Preventive medicine and hygiene*. 6th ed. c1935.
- Strong, R. P.: *Stitt's diagnosis, prevention and treatment of tropical diseases*. 2v. 7th ed. c1944.
- Strecker, E. A.: *Practical clinical psychiatry*. 5th ed. c1940.
- Treves, Frederick: *Surgical applied anatomy*. 10th ed. c1939.

From the NURSES' ASSOCIATION

- Young, Helen, Comp.: *Lippincott's quick-reference book for nurses*. c1943.

From DR. RALPH B. CLOWARD

- Duke-Elder, W. S.: *Recent advances in ophthalmology*. 2nd ed.

James, R. R.: *Studies in the history of ophthalmology in England prior to the year 1800*. c1933.

McKenzie, Dan: *Diathermy medical and surgical in otolaryngology*. c1930.

Stellwag von Carion, Carl: *Treatise on the diseases of the eye*. Trans. from the 3rd German ed. c1868.

Journal of Nervous and Mental Diseases (bac' files).

From DR. ALVIN V. MAJOSKA

Blumer, George, ed.: *Billings-Forchheimer's therapeutics of internal diseases*. 6v. c1929.

DUPLICATE JOURNALS NEEDED

The Library has recently been requested to furnish duplicate copies from 1942 to date of the following journals:

- American Journal of the Medical Sciences.
- American Journal of Public Health.
- American Journal of Surgery.
- American Journal of Tropical Medicine.
- Archives of Internal Medicine.
- Archives of Neurology and Psychiatry.
- Journal of the American Medical Association.
- Military Surgeon.
- Surgery, Gynecology and Obstetrics.
- War Medicine.

These files are to be sent direct to countries farther west, whose libraries have been destroyed during the war. With the help of the MEDICAL GROUP, the Medical Library has completed files of the *Journal of the American Medical Association* and *Surgery, Gynecology and Obstetrics*; however, the others are still incomplete. Inasmuch as the American Red Cross has asked for eight sets of these journals, the Library would appreciate receiving any duplicate copies a doctor might be willing to give for this purpose.



FIFTY-FIFTH ANNUAL MEETING HAWAII TERRITORIAL MEDICAL ASSOCIATION

May 3-6, 1945

MABEL L. SMYTH BUILDING, HONOLULU

The Fifty-fifth Annual Meeting of the Hawaii Territorial Medical Association was opened in the auditorium of the Mabel L. Smyth Building with a joint meeting of the House of Delegates and membership. The following program was presented:

SCIENTIFIC PAPERS

Schüller-Christian Disease by Jesse Smith, M.D., Honolulu.

Congenital Cystic Disease of the Liver by W. H. Walker, M.D., Honolulu.

Marginal Ulcer as Complication of Gastro-enterostomy by J. E. Strode, M.D., Honolulu.

Still's Disease: Treatment of Four Cases with Gold by D. C. Marshall, M.D., Honolulu.

Pellagra: A Report of Two Cases by H. M. Patterson, M.D., Hawaii.

Malignant Tumor of Small Intestines by F. F. Alsup, M.D., Honolulu.

An Unusual Curable Cardiac Condition in Infants by A. S. Hartwell, M.D., Honolulu.

Penicillin Ointment in the Treatment of Infectious Diseases of the Skin by H. M. Johnson, M.D., Honolulu.

A New Treatment for Ruptured Intervertebral Disc by R. B. Cloward, M.D., Honolulu.

Spontaneous Rupture of Uterus During Pregnancy by G. C. Milnor, M.D., Honolulu.

Reemployment of Neuropsychiatric Dischargees by R. D. Kepner, M.D., Honolulu.

Pancreatectomy for Hyperinsulinism: Case Report by R. G. Johnston, M.D., Honolulu.

Cold Agglutinins in Virus Type Pneumonia by E. A. Fennel, M.D., Honolulu.

Systemic Penicillin Therapy in Chronic Maxillary Sinusitis by H. E. Crawford, M.D., Hawaii.

Plastic Surgery of the Breast by C. E. Fronk, M.D., Honolulu.

Differentiation of Lepromatous from "Neural" Leprosy by H. L. Arnold, Jr., M.D., Honolulu.

A Fatal Case of Sprue by T. H. Richert, M.D., Honolulu.

MEETINGS

Council—Thursday evening, dinner meeting at the Pacific Club.

House of Delegates—Friday afternoon, 3:30, Mabel Smyth Building.

Council and House of Delegates—joint meeting—Saturday luncheon, Mabel Smyth Building.

Other meetings held in conjunction with the annual meeting were:

Advisory Committee to Bureau of Crippled Children, Thursday morning, Mabel Smyth Building.

Advisory Committee to Maternal and Child Health Bureau, Thursday afternoon, Mabel Smyth Building.

Round Table Meeting: Territorial Insurance Against the Cost of Hospital Care, led by Mr. Charles F. Honeywell.

Present Territorial Status of Hawaii Medical Service Association, led by Mr. Reginald Carter. Saturday morning, Mabel Smyth Building.

SOCIAL PROGRAM

Golf—Sunday morning, Waialae Golf Club—Frank Spencer, M.D., in charge.

Picnic—Sunday afternoon at the home of Drs. Marie and Robert Faus.

NOTES

Scientific papers presented will be published in the HAWAII MEDICAL JOURNAL.

Minutes of meetings, reports, discussions at the round table, and the President's address follow:

ADDRESS BY PRESIDENT

ERIC A. FENNEL, M.D.

Fellow Members and Guests:

This address should become historic, but only by virtue of its brevity.

I shall not point with pride nor view with alarm. I shall try to briefly review the pertinent events of the past year.

You elected me your president. My first reaction was boundless surprise; my second, heart-warming pleasure; but my third, in rapid order, dismay—dismay at my unpreparedness and ignorance and fear of the things I should do but for which I was not qualified.

Today, when I bid you farewell and Aloha there is still in my heart and mind that same dismay and fear; the things I should have done, haunt me.

As you know, shortly after my election we lost our secretary, Mrs. Bolles. That made the going tough for a while. However, shortly thereafter we acquired the services of Mrs. Edith C. Bennett and I wish to pay tribute to their excellence. She has done yeoman work on our JOURNAL and should be able to carry on after our able editor, Dr. H. L. Arnold, Jr., leaves for the wars.

In appointing the various standing committees I got housemaid's knee from kneeling in supplication to get servitors. Everybody was too busy or too tired to serve on committees. Dr. R. O. Brown is still convinced that I lured him into the chairmanship of the Legislative Committee under false pretenses. I told him this was not a legislative year. He was almost as ignorant of such things as I was but, to his credit, he worked. So did Dr. Kepner in his field. Dr. R. B. Cloward's committee has made this program, predominantly "Association," a possibility. The reports of all these committees will be published in the JOURNAL.

There has been no meeting of your Council, except by mail, during my term, except for one held yesterday, because nothing up for consideration seemed to warrant the inter island travel and desertion of patients.

In substitution therefor, I as your president, revived an old custom and visited each of the County Societies. I fear they learned but little from me, but I became educated indeed. I now for the first time have a truly understanding respect for the plantation physician and his work. I doubt if there is that excellence of rural medicine practiced anywhere else in the world. Each island has its own unique problems and many in common.

Two letters to each member of our Association went out from me during the year in an effort to bring all of you up to date on the affairs of our Association.

I have made an effort, and at least in part succeeded, in getting the minutes of county society meetings to the officers of the other county societies promptly, so that each might know what the other was doing. Each of the out islands was represented on all the standing committees so that they might at least get transcripts of the minutes of meetings held by these committees.

After many labor pains, without anaesthesia, the Honolulu County Society brought forth a revised Workmen's Compensation Fee Schedule, which was promptly adopted in toto by Hawaii, Maui and Kauai and so becomes a Territorial one in fact. Drs. Pinkerton, Strode and Stewart deserve bronze stars and purple hearts.

This fee schedule may become very important to the plantation physicians if the labor unions on those plantations make it economically impossible for the plantations to continue to render gratuitous medical services to certain groups. One of these doctors told me that, even with the lower old fee schedule, he would have had a larger income from this group and the insurance carriers than he received as salary from the plantation for the same work.

Despite much effort, the Hawaii Medical Service Association has not yet been extended to the out islands, primarily because the plantations would not do what unions have forced in industry elsewhere—that is, to make payroll deductions for dues. Without this cooperation, the plan of the H.M.S.A. is not economically sound.

There has been, this past year, a very much improved relationship between the Board of Health and our Association, but there remains room for improvement. Dr. Wilbar, the president, himself has been most cooperative. We must be ever alert to keep the Board of Health out of the practice of medicine and limited to preventive medicine.

The regulation of laboratories proposed by the Board of Health is now in its umpteenth revision. Our attitude has been that only doctors of medicine should direct a clinicopathological laboratory, only a doctor of veterinary medicine should direct a veterinary laboratory and I am sure we would all agree with the Board of Health in any criteria they set for a public health and sanitary laboratory. Further, it is our contention that the requirements for technicians should not exceed those of the Registry of the American Society of Clinical Pathologists. There is, however, a real need for such a law which incorporates these thoughts.

The University of Hawaii has instituted a course for the training of laboratory technicians.

A bill to lengthen the residence clause for licensure to three years was vigorously opposed by a number of us and has happily failed. Even the one-year requirement makes isolationists of us and I think we should organize now for its repeal as soon after the war as seems advisable.

The Council and the House of Delegates will, I hope, approve the proposed change in our Charter and By-Laws which will (1) permit of the election, annually, of a president and a president-elect, so that we may avoid as untrained an executive as I have been and (2) permit the elec-

tion of a secretary and a treasurer for a three-year period rather than one. It is my hope that your new president will call a meeting for this purpose at which you can all vote personally or by proxy.

Dr. Pinkerton, with an advisory committee, is Procurement and Assignment. He laudably long delayed wholesale action in the Territory in an effort to gain, for our citizen doctors of Oriental and Caucasian heredity, equal privileges. It is greatly to be deplored that neither Army nor Navy granted this; they made a sort of "Hood River" decision.

Finally, when wholesale assignments were contemplated and then made, the methods were such that for weeks on end the only results were rumors that flew as thick again as those engendered by the Japs in January 1942.

P. and A. asked neither help nor advice from your president nor your Council, but assumed full responsibility. For that I personally am deeply grateful for thus I have been spared the bitter criticisms and recriminations so prevalent recently in Hawaii.

I wish I knew, and could tell you, how many doctors the Navy really needed and how many was Hawaii's share. I wish I knew what the population of Hawaii Nei is. I wish I knew how many active doctors there were in the Territory. I wish I knew how many—and who—were already in the Service. I wish I knew how many—and who—have been declared available immediately and how many—and who—on sixty-day deferment. I wish I knew what that expression means. All these things at the moment seem to be deep, dark secrets, giving rise to more pernicious rumors.

It is to be hoped that in the immediate future Dr. Pinkerton will make available these data to the editor of our JOURNAL, not only for our information but as a protection to himself.

I have not discussed the "State Medicine" nor the "Uniformed Medicine" that so many of my colleagues seem so concerned about, as an inevitable sequence of the War. At the moment, none of us can see the world nor the future save as through a glass, darkly.

But I have an idea—a conviction—that the doctor who applies himself more to the perfection of his professional capacities and less to his economic outlook will find himself in a comfortable and happy situation under any conceivable governmental set up at war's end—and may that be soon.

Aloha.

MINUTES OF MEETING COUNCIL

Thursday, May 3, 1945 at 6:00 P.M., Pacific Club

Present: Dr. Fennel, presiding; Drs. Gaspar, L. G. Phillips, Withington, Pinkerton, McArthur (Maui), Wallis (Kauai), L. L. Sexton (Hawaii), and Bell.

H.M.S.A.: The Territorial Association commends extension of the service to the outside islands. This has been held up because the plantations will not make deductions from payrolls for dues. Dr. Pinkerton stated that H.M.S.A. wants to get into the other islands in any way possible.

Action: It was voted the Council approves the principle and recommends to the House of Delegates the extension of the H.M.S.A. to the other islands by any possible plan.

Workmen's Compensation Fee Schedule: Dr. Fennel announced that such a fee schedule had been adopted by the Honolulu County Medical Society and endorsed by the other county societies. Copies are available at \$2.00 each. Dr.

Sexton brought up the item of additional cost of x-rays on the outside islands due to high cost of repairs. The schedule, however, is flexible enough to take care of such matters.

Action: The Council recommends to the House of Delegates that the fee schedule, as adopted and endorsed by the county societies, be commended.

Territorial Insurance against the Cost of Hospital Care: A Senate Resolution has provided for a commission of seven to study the subject and an appropriation of \$50,000 to cover the cost.

Action: It was voted that the Council recommend to the House of Delegates that they instruct the President to appoint a committee of not less than two to work with the commission of seven on the fact finding and keep the Territorial Association informed.

Convalescent Nursing Home:

Action: The Council wishes to inform the House of Delegates there is still need for a convalescent nursing home.

Procurement and Assignment: It is felt the public should be informed by newspaper and radio publicity that a considerable number of doctors from the Territory are about to enter the armed forces, and that the public must be educated to get along with fewer doctors and less medical service.

Action: The Council recommends to the House of Delegates that this matter be referred to the new committee on public policy and legislation with instructions to take immediate action to prepare the public for the loss of doctors to the armed forces.

Residence Requirement to Practice Medicine: Dr. Fennel reported that a bill introduced in the Legislature to require a three-year residence before granting a license to practice medicine had been fought by the doctors and pigeonholed. Representative Henriques, who introduced the bill, then threatened to have the one-year residence clause deleted.

Action: The Council discussed at considerable length the dropping of the one-year clause as soon as practical after the war and recommends that the Legislative Committee study this matter and recommend action when the next Legislature meets.

Pensioners on plantations who are sick: No action. This will be covered by the study of Territorial insurance against the cost of hospital care.

City County Hospital:

Action: It is recommended to the House of Delegates that the matter be referred to the incoming Committee on Public Policy and Legislation.

Pre-Marital Law: A bill requiring premarital blood test for syphilis has passed the Legislature. No action is necessary.

Laboratory Regulations: The Board of Health is drawing up laboratory regulations. No action necessary.

Finances: Registration fee:—The Council approved a registration fee of \$5 per member for the annual meeting and a charge of \$2.50 each for tickets to the picnic.

Audit: Dr. Phillips read the auditors' report for the fiscal year ending February 28, 1945. It was voted to recommend that the House of Delegates accept the report.

Library appropriation: It was voted that the annual appropriation of \$500 for the medical library be made as in former years.

Change in by-laws:

a. *President-elect:* It is recommended that the by-laws be changed to provide for the election of a president-elect each year. The president-elect would thus have an opportunity to familiarize himself with the working of the Association and be prepared to assume the presidency the following year.

b. *Secretary and Treasurer:* It was recommended that the by-laws be changed to lengthen the term of office of the secretary and the treasurer from one year to three years.

War Recognition Committee:

Action: The Council recommended that the incoming president appoint a standing committee whose prime consideration would be members who have served in the war and that this committee be directed to investigate and take appropriate action to see that deserving members of the Association be recommended for the Legion of Merit. Such a committee should also keep historical records of all members in service.

Relations with the Board of Health:

Advisory Committee to the Bureau of Crippled Children: The report, read by Dr. Wallis, was favorably recommended to the House of Delegates.

Advisory Committee to the Bureau of Maternal and Child Health: The Territorial Association has already expressed its attitude toward the EMIC program and does not care to go into the matter further.

Dr. Hodgins: Dr. Phillips suggested some expression of appreciation to Dr. Hodgins at this time. Dr. Fennel appointed Dr. Pinkerton to present a short address of appreciation at the Annual Meeting, to be presented to Dr. Hodgins in written form following the meeting.

The meeting adjourned at 9:40 P.M.

Respectfully submitted

L. A. R. GASPAR, M.D.,
Secretary

MINUTES OF MEETING
HOUSE OF DELEGATES

Friday, May 4, 1945, 3:30 P.M., Mabel Smyth Auditorium

Present:

President—Eric A. Fennel
Vice President—F. J. Halford (Honolulu)
Vice President—R. T. Eklund (Hawaii)
Treasurer—Lyle G. Phillips

Delegates:

H. M. Patterson—Hawaii
H. E. Crawford—Hawaii
W. H. Wynn—Honolulu
M. DeHarne—Honolulu
T. Hata—Kauai
R. J. McArthur—Maui

Councillors:

L. L. Sexton—Hawaii
S. Wallis—Kauai
P. Withington—Honolulu

Reports: The following reports were read in full or by title and upon due action duly passed were accepted and placed on file:

Reports of Component Societies:

Hawaii County—by Dr. Mizuire (Exhibit A)
 Honolulu County—by Dr. Gordon (Exhibit B)
 Kauai County—by Dr. Liu (Exhibit C)
 Maui County—by Dr. von Asch (Exhibit D)

Report of the Council:

Read by Dr. Fennel in the absence of the Secretary (Exhibit E)

Report of the Secretary:

Dr. L. A. R. Gaspar (Exhibit F)

Report of the Treasurer:

Dr. Lyle G. Phillips (Exhibit G)

Reports of Committees:

Journal Committee—Dr. Arnold, Jr. (Exhibit H)
 Committee on Public Policy and Legislation—Dr. R. O. Brown (Exhibit I)
 Cancer Committee—Dr. Buzaid (Exhibit J)
 Committee on Psychiatry and Neurology (Exhibit K)
 Medical Advisory Committee of the Bureau of Maternal and Child Health (Exhibit L)
 Medical Advisory Committee of the Bureau of Crippled Children (Exhibit M)
 Health Education Committee—Dr. Gordon (Exhibit N)
 Board of Management, Mabel Smyth Building—Dr. Phillips (Exhibit O)
 Penicillin Committee—Dr. Price (Exhibit P)

A question was raised as to the new law regulating the use of poisons. This question is to be investigated.

The meeting adjourned at 4:00 to meet again at 12:00 Saturday noon in the Mabel Smyth Building.

Respectfully submitted

L. A. R. GASPAR, M.D.,
 Secretary

SUMMARY OF ACTIVITIES OF THE HAWAII COUNTY MEDICAL SOCIETY

EXHIBIT A

S. MIZUIRE, M.D., Secretary

Scientific

In June, 1944 the Society was the guest of Col. Mogabgab at the Mountain View Hospital. An excellent scientific program was presented. Other scientific programs during the year were as follows:

Weil's Disease: 37 cases by Dr. H. M. Patterson.
 Surgical Case Histories by Dr. L. R. Fernandez.
 Plague by Col. Ward.
 Mental Diseases by Dr. W. M. Shanahan.
 Diseases of the Spinal Cord by Dr. R. B. Cloward.
 Survey of Weil's Disease on the Island of Hawaii by Dr. J. E. Alicata.

Public Health

A Tuberculosis Committee was appointed whose function is to make the control of tuberculosis on this island more effective. The committee consists of three physicians, one from Puumale Hospital, one from the Board of Health and one from the Medical Society.

The old method of food handlers' examinations was abolished.

A mobile x-ray unit has been ordered for the Puumale Hospital. As soon as it arrives, chest surveys will be made throughout the island. In conjunction with this survey, blood Wassermann tests will also be taken. This service

will be free of charge. The various plantations will cooperate in these surveys.

The Society went on record as favoring that the Board of Health assume the recording of vital statistics for the district of South Hilo, which was formerly done by the government physician of that area.

Since the present government physician, Dr. L. L. Sexton, wished to relinquish the position of government physician for the district of South Hilo, a committee consisting of Drs. Phillips, H. Sexton and Mizuire was appointed to work out a plan with the Board of Health whereby indigents could be treated by any physician of their choice, such physicians to be remunerated by the Department of Welfare for services.

Personnel

Dr. Simon of Pepeekeo and Dr. Ross of Waimea were transferred to this Society from Honolulu. Dr. Thomas Keay was made an honorary member of the Society.

One member of the Society is definitely going into the armed forces and six others have already applied for commissions.

Miscellaneous

The Society approved the Industrial Accident Fee Schedule of the Honolulu County Medical Society and the Hawaii Workmen's Compensation Association. A local survey was made at the same time to determine the average charges for many of the common daily medical services.

The EMIC program is now operative including all physicians, the Hilo Hospital and all other approved hospitals.

A supply of the AB factor (Lilly) was made available at the Hilo Memorial Hospital.

The dispensing of penicillin was well regulated by the Penicillin Committee—Drs. Orenstein, S. R. Brown and Loo.

An attempt was made in conjunction with the Junior Chamber of Commerce to establish a blood bank at the Hilo Memorial Hospital under an insurance plan. Only 200 persons could be interested in the project and 500 would be necessary to make it effective. The undertaking was therefore dropped and it was decided to have a blood donor list to draw from when needed. A small blood and plasma bank is considered essential for this island.

The Library Committee has continued its excellent work toward the development of a good library for the Medical Society. Plans are under way to move the library from the basement to the first floor of the Hilo Hospital; new and old journals are being bound as the files are completed; and the services of a trained librarian will now be available part-time. An appropriation of \$300 has been made for the current year to continue this work.

SUMMARY OF ACTIVITIES OF THE HONOLULU COUNTY MEDICAL SOCIETY

EXHIBIT B

M. GORDON, M.D., Secretary

Industrial Accident Fee Schedule

Many joint meetings of the Workmen's Compensation Committee and the representatives of the Industrial Accident Insurance Underwriters Association were held, and a fee schedule equitable to both committees was presented to the Honolulu County Medical Society and approved at a gen-

eral meeting on December 15, 1944. This schedule has since been adopted by the Hawaii, Maui, and Kauai County Medical Societies. It is now in the final process of being printed.

Post Graduate

The course given this year consisted of a series of symposiums and round table discussions on many diversified subjects, presented by the members of the armed forces stationed in the Pacific Ocean Areas. This program was made possible by Lt. Col. E. J. Ottenheimer of the Army Medical Department and Capt. M. J. Capron of the Naval Medical Corps.

Committee on Forms of Medical Practice

The chief activity of the committee this year was to set up a physical examination panel. This consisted of doctors who were willing to make physical examinations for large groups for not less than \$5.00 for the initial examination, not including a serologic test or chest x-ray.

Scientific Meetings

Regular monthly meetings were held the first Friday of every month with scientific programs, except the May and December meetings which were devoted to the discussion of the Industrial Accident Fee Schedule. The January meeting was omitted because of the post graduate course. The Society was invited to scientific programs at the U. S. Naval Hospital, Aiea Heights, and the Tripler General Hospital. Attendance at most of these meetings was very small.

Library

The greatly improved service to users of the Library by the acquisition of Mrs. Hill as full time librarian merits special attention. The attendance record shows that throughout the year 6,660 individuals (doctors, nurses, service personnel, and laymen) attended the Library, with reference service provided for 782. The attendance record shows a marked increase above last year, from 240 individuals using the Library in January, 1944 to 775 in January, 1945. A large number of acquisitions of books brought the Library total up to 1,975. Journal subscriptions have increased to 140. In addition 824 volumes of journals were added to complete back files. Through the part-time services of a bookbinder, a total of 259 books were bound and repaired. The bookbinder continued to be available to individual physicians on a part-time basis.

Medical Milk Commission

The commission ceased functioning during the year, due to the discontinuation of certified milk in November, 1944. All funds and equipment were returned to the three dairies concerned and a legal release obtained through the courtesy and help of Mr. Nils Tavares.

O.C.D.

The activities of the emergency medical services in 1941 were greatly reduced, due to the improvement in the military situation as well as the cut in the budget.

Library Endowment Fund

The fund now totals \$26,680.90, an increase of \$16,389.73 over last year's total. This sum has been turned over to the Bishop Trust Company for investment. The Medical Library, which it is hoped will be supported by the interest from the Endowment Fund as soon as the fund reaches a large enough sum, was incorporated as the Honolulu County Medical Library on January 31, 1945. The budget for the

Library this year, however, will require appropriations from both the Territorial Association and the County Society.

Membership

At the end of the fiscal year, the Medical Society had a total of 299 members of all classes. Of these, 15 were honorary, 45 service, and 27 members in military service not subject to dues.

SUMMARY OF ACTIVITIES OF THE KAUAI COUNTY MEDICAL SOCIETY

EXHIBIT C

D. LIU, M.D., Secretary

Scientific

The Kauai County Medical Society conducted its regular monthly meetings on the second Wednesday of each month at the Wilcox Memorial Hospital. In general the meetings were well attended. Regular meetings of the Society were often devoted to business matters to the exclusion of scientific sessions. To remedy this situation, scientific sessions were held conjointly with the regular monthly staff meetings of the Waimea Hospital. Scientific papers included:

Subdural Hematomas and Spontaneous Subarachnoid Hemorrhages by Dr. Marvin Brennecke.

Eye Manifestation in Acute Head Injuries by Dr. Tadao Hata.

Middle Meningeal Hemorrhages and Depressed Skull Fracture—Their Management by Dr. Sam Wallis.

Symposium on Caudal Anesthesia by Dr. Sam Wallis and Dr. Homer Harris.

Massive Intra-abdominal Hemorrhage from a Ruptured Graafian Follicle by Dr. Yen Pui Chang.

Different Types of Pulmonary Tuberculosis by Dr. Donald Chisholm.

Treatment of Tuberculosis by Pneumoperitoneum by Dr. Donald Chisholm.

Choroiditis by Dr. Webster Boyden.

Primary Bronchogenic Carcinoma by Dr. Marvin Brennecke.

Treatment of Lung Abscess by Dr. Isami Umaki.

Atelectasis in Pulmonary Tuberculosis by Dr. Donald Chisholm.

Symposium on War Psychosis by Col. Robert Faus and Staff with a motion picture "Psychiatry in Practice."

Interpretation of Audiograms and Prescribing of Hearing Aids by Dr. Tadao Hata.

Sciatica, Diagnosis of Herniated Lumbar Intervertebral Disc by Dr. R. B. Cloward.

Symposium on Unusual Cases:

Massive Pulmonary Hemorrhage by Dr. David Liu.

Neurocytoma of the Adrenal Glands by Dr. Homer Harris.

Diaphragmatic Hernia of Abdominal Organs in the Thoracic Cavity by Dr. Sam Wallis.

Malignant Cystadenoma of the Ovaries in a Seventeen-Year-Old Female by Dr. Isami Umaki.

Legislation

Of particular interest and significance was the visit of Dr. Fennel, president of the Territorial Medical Association. While Dr. Fennel was on Kauai, he and the recently elected local legislators met with the Society at an informal dinner and very satisfactory understandings were established between the legislators and the physicians.

Personnel

The Society lost one member in October 1944 by the death of Dr. David Betsui. Dr. A. H. Waterhouse, a long term and honored member of the Society, retired from active practice in October 1944 and was made a life-time honorary

member of the Society. Dr. Merton Mack, a member of the Society, transferred his membership to the Honolulu County Medical Society when he transferred his practice to that County. The following members are in the armed forces: Dr. Joseph Walther, Dr. B. O. Wade, Dr. W. S. Kawaoka, Dr. H. C. Chang and Dr. A. M. Ecklund. At present there are 12 active members in the Society.

Public Health

Tuberculosis Survey: Under the supervision of Dr. Donald Chisholm, Kauai received the full benefit of the portable x-ray unit. The following report is partial and unofficial: Of 13,207 plates taken, 205 showed positive results of x-ray of 4x5 films. Fourteen patients were hospitalized and 175 were added to the chest clinics as a direct result of the survey. In addition some 117 patients have been referred to private practitioners for pathology other than tuberculosis. The results of 12,829 serological tests taken concomitantly with the survey are not yet complete.

Committee on Proposed Accommodation for Mentally Disturbed Patients: Attention of the Society has been called to the Territorial law stating that the Board of Supervisors is responsible for provision of facilities for the care of mental patients. Absence of any temporary accommodation for mental cases has presented a serious and trying problem to the local physicians and to the families of patients needing restraint, sedation, and the special medical and nursing care required by such cases.

Medical Service Plans: The efforts of the committee to establish the H.M.S.A. plan on Kauai have been blocked by the rule on some plantations forbidding payroll deductions. The H.M.S.A. plan for Kauai reached partial fulfillment when 6 lay members and 3 medical members served notice of their willingness to be on the Board of Directors.

Penicillin Committee

Satisfactory distribution of penicillin was accomplished by the committee, studying each case on its merits.

Library Committee

The Society now possesses a medical library at the Wilcox Memorial Hospital, with subscriptions to 16 periodicals through assessment of its members.

SUMMARY OF ACTIVITIES OF THE MAUI COUNTY MEDICAL SOCIETY

EXHIBIT D

G. VON ASCH, M.D., Secretary

Scientific

The following is a list of scientific programs which were held:

Skin Diseases of Interest to the General Practitioner by Dr. Harry Arnold, Jr.

Recent Advances in the Field of Urology in War by Major Carl Bunts.

Pregnant Women in Industry by Dr. Pauline Stitt.

Thyroid Disease by Dr. Emidio Gaspari.

Technic of Caudal Anesthesia in Obstetrics by Dr. Howard Liljestrand.

Pasteurization by Dr. Charles Wilbar, Jr.

Leprosy by Dr. Norman Sloan.

Obstetrical Difficulties by Dr. Nelson.

Symposium on War Injuries by Dr. Baty and Marine Division doctors.

Laboratory Methods and Problems of Territorial Medical Association by Dr. Eric Fennel.

Head Injuries by Dr. Ralph Cloward.

Miscellaneous

The Medical Library has been considerably developed and enlarged. Several new books and journal subscriptions were purchased and a considerable number of books and journals were obtained from the Honolulu County Medical Society Library.

Efforts to extend the H.M.S.A. to Maui have not yet been successful.

The Industrial Fee Schedule adopted by the Honolulu County Society was endorsed by this Society.

REPORT OF THE COUNCIL

EXHIBIT E

L. A. R. GASPAR, M.D., Secretary

The Council has had no formal meetings during the year on account of the difficulty of getting the members together and because no imperative business demanded their attention.

An informal Council meeting was held on March 30, 1945, at which a quorum was not present. The date of the annual meeting and general plans for the program were discussed. Proxies were secured from other Councillors and it was agreed to hold the annual meeting the first weekend in May with scientific and business sessions.

REPORT OF THE SECRETARY

EXHIBIT F

L. A. R. GASPAR, M.D., Secretary

The total regular membership of the Association is 284, an increase of 12 over the previous year. By counties this membership is made up as follows:

	REGULAR MEMBERS	MEMBERS IN SERVICE	SERVICE MEMBERS	HONORARY MEMBERS
Hawaii	39	1	.....	2
Honolulu	211	29	44	15
Kauai	12	5	.....	2
Maui	22	5	.....	1
	284	40	44	20
Total all classes.....	383			

The total number of physicians practicing medicine in the Territory as of April 1, 1945 is 309, exclusive of doctors in the armed forces. Of those eligible, 284 belong to the Association, making 92 per cent, as compared to 94.6 per cent last year.

REPORT OF THE TREASURER

EXHIBIT G

L. G. PHILLIPS, M.D.

The satisfactory condition of the treasury is fully ex-

plained by the report of the auditors, Hiu, Dean & Paris. The books of the Association were audited as of February 28, 1945, the close of the fiscal year.

A proposed budget has been prepared for the coming year.

REPORT OF THE JOURNAL COMMITTEE

EXHIBIT H

H. L. ARNOLD, JR., M.D., Editor

Six bi-monthly issues of the HAWAII MEDICAL JOURNAL have been published since the last annual meeting of the Association. These have contained a total of 362 pages, exclusive of the front cover. Of these, 161½ pages have been devoted to advertising and 200½ to text. The number of pages of advertising in each issue has increased during the year from 24½ in the May-June issue, 1944, to 30½ in the March-April issue, 1945. This is of course a healthy sign.

The average 1944-45 issue of the JOURNAL has contained 60 pages, 33 of text and 27 of advertising material. It has contained 3 original articles, 4 special articles, and 4½ editorials, supplied (exclusive of unsigned editorials) by a total of 10 different contributors. Of these contributors, on the average, 5 were Honolulu or Oahu physicians, 1 an outside island physician, 2 Service doctors, and 1½ were non-medical contributors.

The format of the JOURNAL has not been greatly changed during this period. With the first issue of 1945, the advertisements were grouped solidly at the front and back instead of, as previously, scattered through between the feature articles. The change has so far elicited only one small murmur of complaint from our advertisers, and several favorable comments from our readers.

With the second issue of this fiscal year, Mrs. Edith C. Bennett replaced Mrs. Elizabeth Bolles as Managing Editor, and the financial report will show how well Mrs. Bennett has succeeded in her new position. At the same time, Dr. E. A. Fennel succeeded Dr. Douglas Bell as ex-officio member of the Advisory Editorial Board.

Our printer, Mr. Watkins, has suggested that beginning with the July-August issue we might do well to transfer the work to a larger and more elaborately organized establishment, such as the Star-Bulletin plant. Negotiations have been begun, but no decision has been reached as yet. It may prove unnecessary to make the change.

A resume of the financial status of the JOURNAL follows:

	PER YEAR		PER ISSUE	
Expense	\$4140.32		\$690.05	
Income—Advertising	\$2738.44	\$456.40		
Subscriptions	865.30	3603.74	144.22	600.62
Deficit	\$536.58		\$	89.43

Your JOURNAL Committee recommends the continued publication of the HAWAII MEDICAL JOURNAL during the coming fiscal year, on the same basis as heretofore.

REPORT OF THE CANCER COMMITTEE

EXHIBIT J

L. BUZAID, M.D., Chairman

The Cancer Committee held no meetings and conducted no official business during the year.

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

EXHIBIT I

R. O. BROWN, M.D., Chairman

Your Legislative Committee this year did very little active lobbying, but through members of the Health Committees of both the House and Senate were able to accomplish some of our aims.

H.B. 403, requiring three years residence in the Territory before one is eligible to take the medical state board examination, was opposed. This bill was pigeon-holed.

H.B. 159, appropriating \$350,000 for the construction of a new city and county hospital for Honolulu was opposed. This bill has been handed to the Holdover Committee for further study.

S.B. 296 to amend Chapter 46 of the Revised Laws of Hawaii 1945, relating to medicinal use of Hawaiian herbs and plants, was opposed but not too strenuously. At the present time it has passed third reading in the Senate. As it now reads, the herbalists are permitted to add chemical preservatives, commercial flavoring extracts, coconut oil, honey, salicylic acid, petrolatum, sulphur and alaea, and are restricted to the use of herbs indigenous to Hawaii.

Bills pertaining to tuberculosis, mental hygiene and the Board of Health were turned over to those particularly concerned, for their attention.

We feel that we were given good cooperation by the legislators interested in the health of the community.

REPORT OF COMMITTEE ON PSYCHIATRY AND NEUROLOGY

EXHIBIT K

R. D. KEPNER, M.D., Chairman

The activities of this Committee were at a minimum during the year. Dr. Fennel's appointment to the Committee of representatives of the other county medical societies was definitely a forward step. Many favorable comments were received on this score. It has been the attempt of your Chairman to keep the other islands informed as to our activities. While only one regular meeting of the Committee was attempted (and one member beside the Chairman appeared at that meeting), there was considerable correspondence as well as numerous informal discussions.

In September, 1944, a letter was addressed to all members outlining the work of recent years and asking their suggestions for other activities. No answers were received, nor were any suggestions offered.

A letter was therefore addressed to all members of the Committee enclosing copies of the Briggs Law of Massachusetts, the Sexual Psychopath Laws of Illinois and other states, the Uniform Expert Testimony Act, and the Youth Correction Authority Act. Enclosed also was a copy of the proposed registration act for mental defectives in Hawaii, which is being widely circulated by Dr. Mildred Staley. Letters were received from Dr. David Liu, Kauai County Medical Society, and from Dr. R. T. Eklund of the Hawaii County Medical Society endorsing further study of the proposed laws in conjunction with members of the Bar Association and others as had been approved by Dr. Fennel.

However, all attempts to contact the president of the local Bar Association, or any authorized representative, were futile as the president was on the mainland.

The members of this committee believed it wise to scrutinize further the legislation mentioned above and work carefully with other interested groups before presenting such legislation to the legislature two years hence. I am informed that the Youth Correction Authority Act is being viewed with considerable favor by Mr. Thomas Vance, director, Department of Institutions, and that it has a high priority among legislation to be studied for the next session.

Your chairman appeared before the meeting of the Board of Governors of the Honolulu County Medical Society in December, 1944 and presented the above measures, which were endorsed by them as proper subjects for further study.

A number of bills pertaining to mental hygiene were submitted to the legislature. These were studied by your chairman and discussed with some of the other members of the committee and with other interested persons. No formal meeting of the committee was called to discuss these measures in view of the known differences of opinion on them.

It has been very difficult to obtain papers for the section "Neuropsychiatric Comment" in each issue of the HAWAII MEDICAL JOURNAL in spite of repeated requests addressed to members of this committee and others. Nevertheless, each issue except one has gone to press with an article in it. It would seem a shame to let this section die out for lack of material.

Progress has been made by Veterans' Advisors, under the chairmanship of Mr. Alfred Castle. A bill is pending before the legislature to make this a governmental set-up for the next two years, by the end of which time it is hoped that it will no longer be required. Your chairman serves as a member of their Executive Committee.

There was some discussion of organizing a neuropsychiatric association in this area to include members of the armed forces. Your chairman has discussed this idea with a number of servicemen but finds that if service personnel are to participate in a civilian-sponsored organization, all their utterances would have to be censored and the spontaneity lost. It would work well if the servicemen were to take the civilians under their wings and invite them to their meetings. To date, however, they have not shown this disposition, and the psychiatric meetings being shifting in time and place have not been widely attended by us. I can see no good reason, however, why such meetings of service and civilian physicians as are now being held by the x-ray men and pathologists cannot be duplicated by neurologists and psychiatrists.

It is hoped that the members of this committee will be able to devote more time to its activities next year.

REPORT OF MEDICAL ADVISORY COMMITTEE OF THE BUREAU OF MATERNAL AND CHILD HEALTH

EXHIBIT L

FRED LAM, M.D., Chairman

Physical examination of children entering kindergarten and first grade of school in September. Although the physicians are under unusual stress of work at the present time the committee recommends that the current practice of examination of entering school children being performed by physicians in their private offices be continued. It is desired that the examination be done early in the summer so that time is permitted for correction of defects uncovered. In certain districts the physicians may find it necessary to

arrange with the school principal some other method of having the entering children examined.

The committee recommends that booster doses of combined diphtheria-tetanus toxoid be given as a routine part of the examination to all entering children who have previously received immunization against diphtheria. Children who have not previously been immunized against diphtheria should receive the full series of combined diphtheria-tetanus toxoid. In addition, physicians may elect to give a second dose of the combined toxoid to children in order to complete the immunization against tetanus. The last feature is not recommended as a routine part of the school pre-admission medical supervision.

The Bureau of Maternal and Child Health should circularize the physicians to indicate the extent of the examination and immunization desired.

Immunization Records: The committee suggested that the Board of Health consider methods of checking more completely on immunization performed during infancy. A possible method suggested is the keeping of a file on all such immunizations.

Prematurity: It is recognized that prematurity as an important cause of death of infants has not been materially reduced in the Territory over a number of years. The committee recommends several steps to be taken as a part of the Bureau's program of care of premature infants.

1. Hospitals in the City of Honolulu should be encouraged to increase their facilities for admitting mothers and premature infants born outside of the hospital. Such patients should be cared for in the hospital separately from the other mothers and infants.
2. Prematurity should be made a reportable condition in order to assist the Board of Health in developing more effective supervision of the premature infant as soon after birth as possible.
3. The Bureau of Maternal and Child Health should offer the services of a member of its nursing staff specially trained in the care of premature infants. This nurse should be made available for work on premature infants in the nurseries of the hospitals of the Territory.
4. It is recommended that birth weight be added to the birth certificate by the Board of Health.

EMIC Program: The Bureau of Maternal and Child Health reported to the Committee that it is now possible to make additional payments over and beyond the \$50 routine maternity fee when complications require an unusual amount of service by the physician. The committee wishes to refer to the Council for its consideration the principle of payment of additional fees for extra services. If this principle is accepted by the Council, the Bureau of Maternal and Child Health would attempt to draw up a plan of payment for additional services. After review by the members of the Advisory Committee, this plan would be referred to the Council for approval.

The committee disapproved of the payment of differential fees to specialists as distinguished from general practitioners.

REPORT OF MEDICAL ADVISORY COMMITTEE OF THE BUREAU OF CRIPPLED CHILDREN

EXHIBIT M

R. L. HILL, M.D., Chairman

There is a great need in the Territory for more effective treatment and education of cerebral palsied children. The committee has discussed plans for formulation of immediate and ultimate programs aiming at the improvement of services to cerebral palsied children. It is recommended that the Bureau of Crippled Children devise educational material for physicians on prevention of brain damage in newborn infants and that it develop a program of home care on a lim-

ited basis supplementing specialized diagnosis in bureau clinics with physical therapy and occupational therapy in the home. It is hoped that before too many years there will be established in the Territory an institution with adequate personnel and resources and a well rounded program for the treatment and education of the cerebral palsied children. It is suggested that a study be made of the extent to which the Shriners' Hospital would participate in institutional care of cerebral palsy.

It is recommended that the Bureau attempt to build up a complete registry of all crippled children in the Territory by acquainting the physicians with the objectives of the registry and having the physicians report all such cases to the Bureau. The physician in his report of registration would indicate whether assistance by the Bureau for treatment is desired or not.

It is recognized that there is great need for a program for the hard of hearing in the Territory and it is recommended that the Bureau establish a registry of hard of hearing children so that this information may be readily available when a program for treatment and education of such children can be established.

REPORT OF THE HEALTH EDUCATION COMMITTEE

EXHIBIT N

M. GORDON, M.D., Chairman

The Health Education Committee held no meetings and conducted no official business during the year.

REPORT OF THE BOARD OF MANAGEMENT MABEL SMYTH BUILDING

EXHIBIT O

L. G. PHILLIPS, M.D.

During the year 1944 there were 212 committee meetings held in the Mabel Smyth Building, 86 teas and cocktail parties, 77 luncheons and dinners, and the auditorium was used 151 times. A total of 25,826 persons attended these various functions.

A financial statement of the Mabel Smyth Memorial Fund has been submitted which showed an income during 1944 of \$4,021.49 in excess of expenditures.

REPORT OF THE PENICILLIN COMMITTEE EXHIBIT P

A. S. PRICE, M.D., Chairman

Final report of chairman Territorial Committee for Distribution of Penicillin to Civilians, July, 1944-March 15, 1945.

	MILLION UNITS
Prior deficit	9.8
On hand March 1	40.2
Received March	120.0
Prior allotment	675.0
Total Received	855.0
Balance on hand March 15	70.2
Total distribution	774.8
March distribution	90.6

Distribution to Territory

	M. UNITS
Kauai	32.0
Maui	96.0
Hawaii	98.4
Kalaupapa	13.0
Oahu	535.4
Total	774.8

Distribution to Oahu

	M. UNITS
Children's	57.8
Kuakini	44.6
St. Francis	60.6
Queen's	320.1
Others	52.3
Total	535.4

Cases Reported

	TOTAL
Oahu	684
Hawaii	190
Maui	98
Kauai	77
Kalaupapa	0
Grand total	1049
Unreported: 107 from Oahu.	

Summary of Results

Excellent	258
Very good	269
Good	226
Fair	120
*No benefit	176
Grand Total	1049

* No benefit (176 cases):

In this group there were 64 deaths, of which 28 received treatment for less than 24 hours.

The preceding figures and cases do not include 243 ampoules of penicillin released to The Queen's Hospital by the Board of Health to treat 205 cases of gonorrhea as follows:

	MALES	FEMALES	TOTAL CASES
1 Ampoule	122	60	182
2 Ampoules	12	2	14
3 Ampoules	3	2	5
4 Ampoules	4	0	4
			205

The most common treatment of gonorrhea was 10,000 units intramuscularly every 3 hours. As a whole, results were excellent in approximately 90 per cent of the cases, but no proved case of gonorrhea has as yet been reported as absolutely penicillin resistant. As may be seen by the table, approximately 10 per cent required supplementary treatment beyond the 100,000 units of ten injections.

Regarding the treatment of syphilis 32 cases applied for penicillin and the requests were granted. The series is small; most were old cases treated and found resistant by other methods; inadequate time has elapsed since institution of treatment to report any kind of results. Certain criticisms, suggestions and trends only may be offered.

1. Standardization of quantitative titre methods needs to be done before there can be any satisfactory correlation of cases. At least three laboratories ran three different sets of different quantitative tests which included Kolmer Wassermann, Kahn and Eagle tests.

2. Few cases were followed at regular stated intervals with quantitative tests, perhaps due to uncooperativeness on the part of the patients.
3. Preliminary results show considerable variation in the titre of the reagin, some reaching over 1200, but on the average about 240 Kahn units.
4. There was no marked reduction in the Kahn units for about two months after completion of treatment.
5. After two months there was a more rapid fall in the titre, but to date no full negatives can be reported—perhaps in part due to the short term over which the series has run.
6. Average doses have been about 2,400,000 units beginning with 10,000 units for the first 8 doses and then 40,000 units every 3 hours thereafter until treatment was completed. One case received 4 million units.
7. No serious Herxheimer reactions have been reported.
8. There is no indication, at the moment, that penicillin treatment has definitely had a favorable reaction on any of the late cases of central nervous system lues, and there is a suggestion that methods used up to this date might ultimately prove inadequate and possibly unsatisfactory.
9. It is believed that the most benefit will probably be derived in the treatment of early cases; that many cases will need a combined treatment with arsenicals and heavy metals; and that the status of penicillin in the treatment of syphilis is at the moment undetermined. It seems obvious that huge doses do not constitute the solution. Whether repeated courses of treatment with penicillin at monthly intervals will be endorsed is problematical, but it is a possibility.

Undoubtedly the Board of Health will have additional information on this subject in the near future, and the possibility of securing penicillin through the Board of Health for indigent cases may be in the offing.

Reactions:

One case of gout was definitely aggravated by penicillin.

One case of asthma was definitely aggravated. The drug had to be discontinued and on re-establishment of treatment an acute crisis developed which was rather resistant for three days to palliative measures.

Two cases of urticaria were reported.

No fatal reactions were reported.

In the meantime, thanks for your kokua, and for your patience in your trials and tribulations with the management of distribution of penicillin under the Territorial Committee. It is a pleasure to us as well as to you to know that distribution is not any longer regulated and the need no longer exists. The filing of this report closes the activities of the Territorial Committee for distribution of penicillin to civilians.

ROUND TABLE MEETING

Saturday Morning, May 5, 1945, 8:00 A. M.,

Mabel Smyth Building

DR. ERIC A. FENNEL, Chairman

Territorial Insurance Against the Cost of Hospital Care*

MR. HONEYWELL. Some considerable concern has been felt over the constantly mounting cost of hospitalization. A few years ago the cost was \$5 per day. Last year the average of county hospitals was \$9.96, of private hospitals \$8.49. Hospital administration is not particularly concerned with the indigent. They are cared for by other funds. We are not particularly concerned with the wealthy. But we are tremendously concerned with the 80 per cent cross section of the community. The efficiency result of county operated hospitals is not always satisfactory in the ultimate cost. The people pay for the fire and police departments. We all feel

we are lucky if we don't have to call on their services. Yet we are perfectly willing to pay to maintain them. You would be a little mad if, after having a fire and losing your home, you had to pay the fire department for all its costs since the last fire. Patients go to the hospital because they are sent. They have no choice.

Standby costs of the hospital—not the capital to acquire them in the first place, but the cost of maintaining and operation—are our concern. The patient would pay for food, laundry, drugs, medication and other costs which would not be involved if he had not gone to the hospital. This is a territorial plan, not a city or county plan. The Board of Health should determine how many beds are required for the Territory and what are the standby costs at each hospital for maintaining the facilities. The individual hospital may become a contractor to the Territory for providing those facilities. Theoretically the hospital could then operate without a patient, but that never happens. If the plan were in effect and the hospital qualified, it could be of any faith or description. The plan does not apply to custodial institutions for the care of tuberculosis, prolonged mental disease and leprosy. We have arrived at a very rough figure of 75 per cent of the cost as a standby fee and 25 per cent for occupancy. You doctors are interested because the hospitals are your workshop. There are patients today who are at home for lack of money who would be better cared for in the hospital. If that is true today, how much more true it would be in harder times financially.

We thought we could just push this right through the legislature. We found there were numerous difficulties in our plan and further study was needed. The exact bill was laid on the shelf. A two-year commission to study the program has been provided by Senate Resolution No. 10. It has passed both Houses and is awaiting the Governor's signature. To this was added a study of the Andrews Bill, H. B. 659. This calls for a complete system of health insurance covering doctors' fees as well as hospital care. It is on a basis of payroll deduction—half paid by the employer, half by the employee. We believe it is worth considering. It will also be studied by the seven-man commission. Cost of mortuary service was also added as a rider at the last minute. Fifty thousand dollars was appropriated for the entire study. In two years it is hoped the community will be sufficiently informed.

DR. PHILLIPS. I think this proposal is something which merits more than casual study and understanding by the members of the medical profession. It is something quite new. Still it bears some relationship to the bogey of state medicine. You will find that most people are interested in spreading the costs of medical care. The method, however, is in question. There was a time when a hospital consisted of a bed and three meals a day. Today the cost of hospitalization has increased so greatly because of the multiplication of diagnostic methods, laboratory fees, etc. Even before the war the cost of hospitalization had increased beyond the powers of many people to pay. It is only reasonable that same machinery should be set up to take care of this problem.

But what are the abuses and problems which arise? The doctors and the public should consider these. First—protection against abuses of the plan. When the time comes that it is cheaper to stay in the hospital than to stay at home, there must be certain limitations and certain restraints to prevent such abuses of the public generosity. What those restraints shall be is very important to the medical men. That brings in a third person between the patient and the doctor.

Second—if the public funds are raised and diverted for this purpose, it seems reasonable to believe that the chiropractors, herb doctors, etc., will have an equal right with the medical men in demanding that their patients be admitted to the hospitals. In order for our hospitals to be ac-

* See also *Civilian Hospital Needs*, this issue.

credited to receive internes and residents, they must receive the approval of the A.M.A., A.C.S., etc.

There are many complications in what we all consider a very laudable purpose. Therefore it behooves every medical man to keep informed.

DR. WITHINGTON. There is a tremendous recognition all over the country of the need for hospital assistance. There is no question in my mind that eventually there will be more help from the government in medical care. It is wise to put this new plan off for two years. At that time people may be in a different financial position. There must be some sort of change. I think the legislature is wise to study it.

DR. WILBAR. This is an excellent resolution because there will be a thorough study of this important question. I have not even settled in my own mind about the part of the Board of Health in such a matter. I wish to recommend "American Medical Practice in the Prospectus of a Century." This is a new book from the Commonwealth Fund which gives an excellent analysis of the problems of physicians, patients and care. I recommend it for your study.

DR. SHANAHAN. Is there any similar plan in operation?

MR. HONEYWELL. Not to our knowledge.

DR. SHANAHAN. What ideas concerning the raising of the money have been considered?

MR. HONEYWELL. There have been a number of ideas. That has to be worked out.

MR. CARTER. If the Andrews Bill had passed the Legislature, would it have embodied the features you are working for?

MR. HONEYWELL. Yes, in part.

DR. SHANAHAN. The demand for hospital care is elastic. If a plan of this kind goes through, the need for hospital beds in the community will suddenly increase. There will be the problem of providing an adequate number of beds or of deciding who is eligible for hospitalization and how long. The commission would have difficulty figuring out how many additional beds would be needed.

DR. FENNEL. Might that not be controlled by having a smaller percentage contributed—such as 25 per cent instead of 75 per cent? Then perhaps increasing the percentage gradually. The average American citizen never learned how to budget. Uncle Sam stepped in and deducted taxes from income. He is going to deduct for health. We had better see that he does it in the right way.

MR. HONEYWELL. It costs the people of this community in excess of five million dollars a year for hospitalization. That cost will continue, but under this plan it would be evenly divided. We believe in the continuation of private hospitals.

DR. FENNEL. You spoke of payroll deductions. There are many people in the Territory who are making money but are not on a payroll. What about them?

MR. HONEYWELL. The present withholding tax applies to all income earned within the Territory. We think of 1 per cent of income. There is no way of tying it to a fixed per cent. It could be $4\frac{1}{2}$ per cent some years from now. The question is how to levy a tax which is eminently fair. A property tax would not be fair, nor would a tax entirely on the wage earner. That was one of the major questions which required further study.

The attorney general first said any doctor licensed to practice could practice in any hospital in the country. It was pointed out that this could not be so. There is no thought of private hospitals becoming territorial hospitals.

DR. BELL. How will this tie in with the territorial compensation law?

MR. HONEYWELL. Either the rates would go down or the benefits would increase. One thought I would like to leave with the members of the Territorial Association. There is no thought of putting the doctor out of business. We are trying desperately to work with the doctor in this plan. We are trying to consult with the doctors. Sponsors of the plan include leaders of the C.I.O., A.F. of L., Bishop Sweeney, the attorney general, etc. We certainly believe a two-year study of the problem is definitely indicated. The citizens will attack the problem in a way which might not be satisfactory.

DR. PRICE. I think you should be congratulated on getting the appropriation for the study.

Present Territorial Status of Hawaii Medical Service Association

MR. CARTER. Dr. Fishbein recently, in discussing the Wagner-Murray-Dingell Bill, said many forms of coverage are going to be developed for the cost of illness. The Blue Cross plan is the strongest organization in this field. The most recent proposal is the Medical Plans Council of America. This movement will study the medical plans and try to tie them together like hospital plans. The Wagner-Murray-Dingell Bill is apparently dead now. Senator Wagner has written a new bill, the status of which I do not know. The Andrews Bill is the same bill as the Governor Warren Bill in California. It has been the subject of considerable controversy in California and has not been released from committee.

Our plan is more complete in coverage than most and a little higher in cost. An increasing number of employers are paying all or part of the cost for their employees. The unions are taking a wider interest. Three unions now have brought their membership into the plan.

Our constitution and by-laws have been approved for the outer islands. Our plan has been approved by the Kauai Medical Society. One of our objectives for this year is to extend to each of the outer islands. The biggest problem has been getting payroll deductions. We are going to make an effort to start regardless of payroll deduction difficulty.

This month we have recommended to the Board of Directors increasing the benefits—increasing office calls from 5 to 6; increasing hospitalization from 21 to 30 days; and that penicillin up to \$25 be provided in hospitalized cases only. We must also review the exclusions and raise the outside limitations.

DR. EKLUND. Several of the plantations have started an insurance system of their own on the outside islands. It applies only to the plantation hospital. It never struck me as entirely ethical.

MR. CARTER. We have absorbed the Aiea plan into H.M.S.A. It has been expensive to cover that group because of the use of the hospital for minor illnesses.

DR. WALLIS. How has that plan worked?

MR. CARTER. We have not lost cash money, but it has been an expensive plan to carry that group. We have not put by much for reserve.

DR. LARSEN. It was not satisfactory from the standpoint of the plantation doctor. The plantation manager, in agreement with the plantation doctor, agreed to cover anything not covered by the plan. Fifty cents a month extra was charged. The doctor got the 50 cents. For the first year it

looks bad on paper. The cost of the items not included was greater than those which the H.M.S.A. cared for. This must be solved by covering more items or by adjustment. If legislation would cover all those who are willing to pay for the plan, the study will give us a compromise to show how industry can be covered by the H.M.S.A., before the unions step in and cover us. Out of this we hope to learn the mechanics of how to cover the plantations. As yet it is not satisfactory from the standpoint of the plantation and the plantation doctor.

We have to realize no private organization is allowed to deduct for any organization outside of the plantation. If it is not taken out of the payroll I feel it would not work at all. I would like to have the plan analyzed to see how we can make it solvent for industry. How can we make it a plan which will continue to give freedom of choice, which will make it feasible for people who are used to having every little thing done for them?

MR. CARTER. As we worked with family groups, we charged \$1.10 for an individual and 90 cents for the wife. For the second, third and fourth child we charged 90, 75 and 60 cents, with a maximum of \$4. Now we have made it 90 cents for each child with a maximum of \$5.

DR. LARSEN. Of course there is an abnormal distribution of population among the 540 families at Aiea because the number of women and children is so large now. There are so many families with 8 or 10 children. Most of the single men left the plantations when the war scare came. Families averaged \$500 per month for medical care.

DR. COOPER. Describe the Aiea plan more thoroughly, please.

MR. CARTER. It is a plan to care for skilled employees at Aiea on an experimental basis. The frequent use of the hospital for short term illnesses of 1 or 2 days is a great handicap. About 100 per cent of the income was expended due to these short term hospitalized illnesses.

DR. PATTERSON. At Olaa in the 6 years I have been there we have tried to study the various plans sent to us, from the standpoint of the patient, the plantation and the doctor. The biggest objection has been the exclusions. There should be no exclusions. Such a plan would be more favorably considered by the management.

From the patient's standpoint, there has been no demand for a plan where we have been, probably because it has not been presented to them properly. We had 78 skilled workmen on the payroll before the war. That number is probably much more than doubled now. This is the largest plantation on Hawaii. That does not seem too fertile a field for you. If the employees want to come into the plan, the management and the doctors would be willing.

DR. LARSEN. What happened to Maui where there was such a concentrated attempt by the doctors themselves?

MR. CARTER. We were not allowed payroll deductions. We want to keep the overhead down to 10 or 15 per cent.

DR. LARSEN. It is not a question of the 78 skilled workmen on a plantation. It is a matter of avoiding the unions taking it over. There is a definite threat of government employees taking this over. We must work out a satisfactory plan to prevent this.

DR. PATTERSON. We analyzed the medical costs for the skilled workers for two years. There were only 3 in 78 who would spend as much for medical care in 2 years as you would have collected in dues.

MR. CARTER. The answer is that it is spread over a 5- or 10-year period.

DR. EKLUND. It would be to the benefit of the plantation

itself to rule out all exclusions. Would it not be proper for the plantation to make a contribution?

MR. CARTER. You must meet the doctor's bill on the fee schedule and you must meet the degree of hospital care you say you will give. It is a great thing to use the hospitals as much as they are used on the plantations, but it is highly expensive when you are carrying the cost on a low cost plan.

DR. LARSEN. The thing is not entirely solvent. Could the government pay one-third and the plantation pay one-third? It is hard to sell it unless the plantation contributes as they did at Aiea.

DR. WILBAR. Has the H.M.S.A. considered taking on the cost of dental care?

MR. CARTER. No. We have secured some surveys of costs, though.

MINUTES OF MEETING COUNCIL AND HOUSE OF DELEGATES

Saturday, May 5, 1945, Luncheon,
12:00 noon, Mabel Smyth Building.

Present:

President—Eric A. Fennel
Treasurer—Lyle G. Phillips
Vice President—R. T. Eklund (Hawaii)
Vice President—F. J. Halford (Honolulu)

Councillors:

Paul Withington
F. J. Pinkerton
R. J. McArthur (Maui)
S. R. Wallis (Kauai)
L. L. Sexton (Hawaii)
D. B. Bell

Delegates:

H. M. Patterson—Hawaii
H. E. Crawford—Hawaii
T. Hata—Kauai
R. J. McArthur—Maui
H. S. Dickson—Honolulu
D. C. Marshall—Honolulu
M. De Harne—Honolulu
H. T. Rothwell—Honolulu
F. D. Nance—Honolulu

Minutes: A summary report of the meeting of the House of Delegates held the previous day was given by the President. Reports of officers, societies and committees had been read in detail or by title at that time.

H.M.S.A.: The recommendation of the Council that the H.M.S.A. be extended to the other islands was endorsed.

Industrial Accident Fee Schedule: The fee schedule adopted by the Honolulu County Medical Society was endorsed and commended.

Territorial Insurance against the Cost of Hospital Care: The subject was well outlined this morning by Mr. Honeywell at the round table discussion.

Action: The President was instructed to appoint a committee of not less than two to work with the seven-man fact finding commission to be appointed by the Governor, and to keep the Territorial Medical Association informed.

Procurement and Assignment: Dr. Nance suggested that any publicity regarding the decrease in available medical

service should include the fact that doctors entering the service should still be considered as their regular doctors by their own patients, for they expect to return to their own practice. Dr. Dickson called attention to an item in the report of the Naval Commission sent from Washington by Congress to study housing in Honolulu. This commission was of the opinion that *more* doctors and nurses were needed in Honolulu, rather than fewer. Dr. Pinkerton suggested the House of Delegates and the Council write to the Public Health Committee of the Chamber of Commerce requesting favorable consideration to the allocating of such funds as are necessary to educate the public about future medical care available here when more doctors enter the service.

Action: The Committee on Public Policy and Legislation was instructed to take immediate action to prepare the public for the loss of doctors to the armed forces. It was recommended that the Committee seek the assistance of the Public Health Committee of the Chamber of Commerce.

Residence Requirement to Practice Medicine: The three-year and one-year clauses were discussed. Since there will not be another session of the Legislature for two years, the matter was referred to the Committee on Public Policy and Legislation for study.

City County Hospital: This matter was also referred to the Committee on Public Policy and Legislation for study.

Changes in By-Laws:

- It was unanimously voted that the by-laws should be changed to provide for the annual election of a president-elect who should familiarize himself with the workings of the Association and be prepared to assume the presidency the following year.
- It was unanimously voted that the by-laws be changed to lengthen the term of office of the secretary and the treasurer from one year to three years.
- The President was directed to call a special meeting of the Association for this purpose.

War Recognition Committee: The President was directed to appoint a standing committee whose prime consideration would be members of the Association who have served as civilian or military doctors in the war; that such committee take appropriate action in recommending deserving members for the Legion of Merit; and further that such committee keep historical records of all members in service.

Board of Health: The report of the Advisory Committee to the Bureau of Crippled Children was accepted and approved. The report of the Advisory Committee to the Bureau of Maternal and Child Health was approved with the exception that the Territorial Association has already expressed its attitude toward the EMIC program and does not care to go into the matter further.

Treasurer's Report: The Treasurer read the report of the auditors and presented the following budget:

Budget — 1945-1946

<i>Cash Balance March 1, 1945</i>	
Cash Fund	\$ 25.00
Bank of Hawaii	4,245.10
Bishop National Bank—Savings account.....	805.49
<i>Income</i>	
Dues—284 active members at \$15.00 (not including members in service and Honorary members)	\$4,260.00
<i>JOURNAL</i>	
Advertising	3,000.00
Subscriptions and sales.....	900.00
Annual Meeting	200.00
	<hr/>
	\$8,360.00

<i>Expenses</i>	
Salaries	\$2,400.00
Rent	480.00
JOURNAL Expense	4,500.00
Library appropriation	500.00
Travel (President's inter-island trips)	100.00
Miscellaneous (postage, supplies, printing)	400.00
	<hr/>
	8,380.00
<i>Net Loss</i>	\$ 20.00

This budget was accepted by unanimous vote.

Dr. Dickson suggested buying a \$1000 bond.

HAWAII MEDICAL JOURNAL: It was moved, seconded and passed that a vote of thanks to Dr. Harry L. Arnold, Jr., Editor, and Mrs. Edith C. Bennett, Managing Editor, be expressed by letter.

Elections

Officers: Dr. Withington, Chairman of the Nominating Committee, reported as follows: Dr. Fennel, the President, had appointed the same Nominating Committee as last year (Drs. Withington, Brown and Strode). Dr. Fennel was strongly in favor of a President-elect who would have a chance to familiarize himself with his duties. The members from the other islands felt that Dr. Fennel had been a very satisfactory president from their point of view. The other islands had had a right to a president from their societies at least once during the war years, but had generously granted that privilege to Honolulu for another year. A longer term of office for the secretary and treasurer had been deemed advisable.

The officers unanimously elected for the year 1945-1946 are as follows:

President

Eric A. Fennel

Vice Presidents

F. J. Halford, Honolulu*
R. T. Eklund, Hawaii
I. Umaki, Kauai
George von Asch, Maui

Secretary

L. A. R. Gaspar

Treasurer

Lyle G. Phillips

Councillors

R. J. McArthur, Maui, 1 year
R. R. Wallis, Kauai, 1 year
L. L. Sexton, Hawaii, 2 years
D. B. Bell, Honolulu, 2 years
F. J. Pinkerton, Honolulu, 3 years
T. H. Richert, Honolulu, 3 years

Next Meeting: It was again voted to leave the decision as to the time and place of the next meeting to the Council.

Mabel Smyth Building: Dr. Halford moved that letters be sent to Dr. Phillips and Dr. Arnold, Jr., voicing the appreciation of the Hawaii Territorial Medical Association for the many hours they have devoted to the management of the Mabel Smyth Building.

Adjournment: The meeting adjourned at 1:40 to continue the scientific sessions.

* The Honolulu County Medical Society postponed its annual election temporarily.

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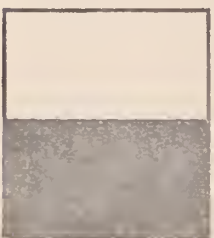
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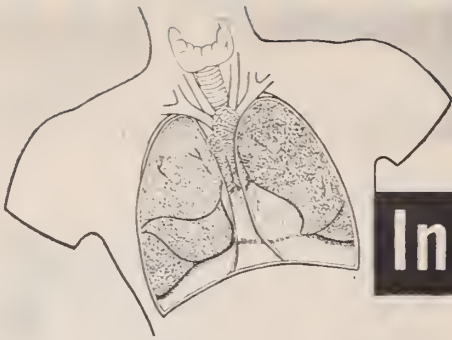
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^{*}Stainsby, W. J.; Foss, H. L., and Drumbheller, J. F.: Clinical Experiences with Penicillin, *Pennsylvania M. J.* 48:119 (Nov.) 1944.

McBryde, A.: Hemolytic Staphylococcus Pneumonia in Early Infancy; Response to Penicillin Therapy, *Am. J. Dis. Child.* 68:271 (Oct.) 1944.

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Larsen, N. P.: Observations with Penicillin, *Hawaii M. J.* 3:272 (July-Aug.) 1944.

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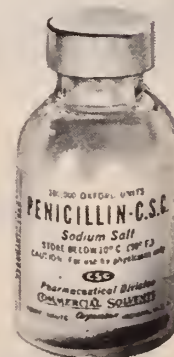
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* *Laryngoscope*, Feb. 1935, Vol. XLV, No. 2, 149-154
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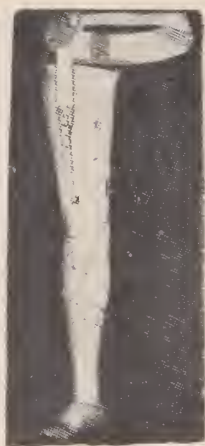
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